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## ORIGINAL ARTICLES.

### A GLANCE AT THE AMERICAN MEDICAL PROFESSION SINCE THE BEGINNING OF THE PRESENT CENTURY.

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To estimate the progress of medicine since the beginning of the nineteenth century, it is necessary to view the conditions of that period. Physicians then were not troubled with obstacles and responsibilities as they are now, as the calling rested on the same basis with all other common enterprises. Practitioners, whether regularly bred or impostors, had liberty to offer their services, and there was little difficulty in justifying their work among the people, who knew much less about medicine than they do now. Quacks with gift of gab and popular manners were sure of success.

There were no specialties then, but naturally, in every community, some practitioner sprang up into notoriety whose genius led him to feats of surgery, by which he gained superior fame. Opportunities of medical education were so restricted that a majority of physicians in rural and village communities were either self-taught or served a term of apprenticeship under some popular doctor of experience. Scarcity of money and difficulty of transportation were hindrances to all but a few. Transylvania was the only school in the West and South, only three of any note were in the Northeast, and among these, that of Philadelphia held chief patronage, for as far along as 1830, the Pennsylvania University was crowded with students from New York and the New England States. Medicine was then taught almost entirely from the rostrum, clinics being left out at Transylvania, and occupying only one hour of every week at the Pennsylvania Hospital in Philadelphia. The chairs of theory and practice and the institutes entirely overshadowed all others, and the professors of these were favorites of every class; indeed, they were fairly worshiped. Any octogenarian now living who listened to Charles Caldwell at Lexington, Ky., or Nathaniel Chapman of Philadelphia, in 1827, will bear witness to this, for he must have been charmed by their eloquence, especially that of Caldwell, who may have had equals in other branches of oratory, but never a superior. His person was of the grandest type, six feet two or three inches tall, well proportioned and as straight as an arrow, and modeled like an Adonis, all except his feet, which were incased in shining boots No. 10 or 11, of which he seemed to be vain. His eye was that of an eagle, and his bald head, with a broad, projecting forehead, thin lips and ruddy cheeks, gave him the appearance of a superior being. He never failed to arouse the enthusiasm of the class as he gracefully entered the doorway every day at 10 o'clock, elegantly dressed, and with hat in hand marched up to the rostrum, while the house was shaking with thunderous applause. Booth and Forrest never created a louder stamping of feet. His hour never seemed more than twenty minutes, and while speaking, every action was grace and every word was music. Indeed, Caldwell had a right to be vain. But alas! envied by his colleagues and victimized by their secret ex parte machinations, he was finally superseded and left on the brink of old age to pine away in sorrow, with his laurels withering on his brow. Such is fame.

At that early time, medicine could hardly be called a science; the whole practice was more or less imbued with empiricism, for Marshall Hall, Brown-Séquard, Bell and other physiologic discoverers had not yet spoken. Authority was paramount, and he who had the eloquence and logic to maintain his theories, whether they were right or wrong, was always a champion. Didactic teaching was "the order of the day," especially in America, where polemics and democracy dwell together. Humoral pathology was the principal subject of controversy, and the forces were nearly equal. They were dubbed by the boys *fluids* and *solids;* the former referring all processes of disease to the circulation, the latter to nervous sympathy. The fiercest battles, however, were fought to decide whether fever is idiopathic or symptomatic. Caldwell, with his rhetoric, was a brilliant symptomatist, and thus many out of the large class went home "dyed in the wool." According to his view, *ubi irritatio, ibi fluxus* is the *fons et origo* of all disease; and so firmly did he believe in the power of nervous sympathy, that he boldly declared that conception was amenable to it, thus disfranchising and rendering nugatory the spermatozoic individual with all his living energy.

But while all this was going on in America, now and then an ambitious young graduate who had ventured across the perilous waters in search of additional accomplishments, was soon convinced that he had yet much to learn. He was surprised to observe eminent professors walking the clinics surrounded by crowds of students anxious to see as well as to hear, while others, with gangs of seekers intently looking on, were delving in laboratories to expose to their view the hidden mysteries of Nature. At once he became a lover of science, and appreciated the glaring necessity of reformation in the mode of teaching at home. Availing himself of the favorable opportunity, the young man labored as a student again; and after ample observation, and storing his mind with all the improvements of medical art and science in Europe, he returned to his native country to enlighten the profession and fall in as a teacher of young men in some one of our schools. And as intercourse with Europe became facilitated by steam, crowds of young men began to pass over, to imbibe

the lore of renowned institutions there, and thus medicine soon became renascent in America, where it had still maintained the conditions of colonial times.

Before the advent of this revolution, surgery differed materially from surgery now. Though commanding the most profound admiration of every one, and exalting the bold operator far above his compeers, yet few, even the most talented, ever aspired to that distinction; for, in the absence of anesthetics, surgery was little less than human butchery, as it unavoidably tortured the victim of a capital operation beyond endurance. Screams of the agonizing patient, wails of the nearest kindred, tears of sympathizing friends were never absent. It is a fact that operating surgeons, having passed through these sad ordeals, were known to weep like children when all was over and they were away from the scene of suffering, and dared remember the tragedy. Well does the writer of this, recollect an operation performed, in 1811, on his little brother, by the once celebrated Dr. White of Virginia. The child was 9 years old. His right tibia, for two-thirds of its length, was necrosed, and the doctor might have left the lower third in its socket, but he did not. He rapidly scooped out the entire bone, and then filled the gaping space with fine oiled tow and wrapped a loose bandage around it. Then leaving the room to put up his instruments, tears were falling and he was wiping the instruments dry, and wiping his eyes at the same time. Another case has not been forgotten: a young physician, just returned from Philadelphia with his diploma, was called upon to amputate the leg of a poor young man brought from a distance and accompanied by his mother, sister, two brothers and several friends. The large attendance signified the interest felt in the young man. An empty old house across the river was obtained free of rent, and the doctor and assistant were on hand at the appointed time. The leg had been amputated with firmness and dispatch, and directions given for attending to the case, and the two doctors were fording the river on their way home when, all at once, the operator burst into tears as his mind began to realize the pitiful scene, impressed but not noted while the operation was going on. Doctors of the present generation may regard all this as quite silly; nevertheless, language fails to portray the horrors of bloody surgery in the absence of an anesthetic.

Midwifery in those times was chiefly confided to the care of old women who, in the country and village, were called "granny," whether white or black. In the slave States, the black granny was often employed and physicians were seldom called in, except in difficult cases—mal-presentation, hemorrhage, or retention of the "arter beth." In the few large cities of that period, doctors were just beginning to reap the benefit of that valuable practice, which had ever been in possession of midwives since the first accouchment of our Mother Eve. Surgical gynecology was unknown then, and horrible cases of vesico-vaginal fistula, uterine fibroids, and ovarian tumors were the painful, long continued preludes of death among the women of almost every neighborhood. It is true that Dr. McDowell of Kentucky had long since plunged his knife through the *sacred* peritoneum and turned out a very large ovarian tumor, saving a woman's life, but that only proved that he was a reckless dare-devil void of conscience; and so the great surgeon and benefactor of woman lived on and died, ignorant of the fact that he had rendered the name, *Ephraim McDowell*, immortal. In fact he might have regarded himself as under the ban of public sentiment. Such is often the reward of manhood and genius. Thus went on the sufferings and misfortunes of the gentler sex, till about the middle of the century, when a poor young doctor, in feeble health at Montgomery, Ala., was known to be harboring, at his own expense, two or three negro women in a small board shanty in his own yard, which was laughed at as *Sims' Hospital* by some neighboring physicians. These women were victims of vesico-vaginal fistula, and Sims was experimenting to find a substitute for the hollow, conical speculum, which precluded free manipulative access to the injured parts. The bent handle of an old pewter spoon was improvised, the rupture exposed, and nothing remained to insure a perfect cure, but ordinary mechanical digitation. The jokers had enjoyed their fun for a year or more, but when Aunt Peggy and Aunt Lucy walked out smiling and rejoicing, dressed in their clean, homespun, white cotton frocks of sweet smelling odor, they began to bite their lips; and one of them even ventured to declare that he had already anticipated Sims, and a controversy seemed imminent. But the poor young man only said "shoo fly," and went on stitching, till he found himself in Europe hobnobbing with royalty and nobility, while stuffing his pockets with shining shekels to scare away the wolf from his door forever. The writer was several years older than Sims, and at that time lived in the same State not far distant, when he was struggling, as a young practitioner, for means to support his family; and he well remembers the witty comments of rivals, who criticised his methods of laying the foundation of surgical gynecology. He must plead guilty to the charge of smiling as he listened to those jokers, but now he begs the privilege of falling on his knees to honor the memory of Sims. And now, who will say that Dr. Francis Marion-Sims[1] ought not to have a monument erected and paid for by American physicians to immortalize his name?

More than one-third of the century had passed away, when it became evident that the domain of medicine was too extensive for the qualification of any individual physician to discharge its functions with intelligence and honest service. Therefore, specialties naturally came into vogue, enabling the general practitioner to fully equip himself for every phase of disease in his line; and at the same time, the simple stethoscope and the marvelous microscope, with many other minor improvements and facilities of great value, were inaugurated to augment the importance of our profession. But when the middle of the century was reached, lo! chloroform had been discovered, and surgeons everywhere were seen quietly and leisurely carving the flesh of living, sensitive human beings, while their subjects were wrapped in the folds of lethean bliss, and then at a single bound, surgery leaped to the highest distinction. The terrible agonies of frightful operations had ceased forever, and blood, in great measure, had ceased to flow by the surgeon's knife, being restrained by more careful cutting, and the genius of Esmarch. In addition to all this, the civil war came in 1860, not only to alter, with terrible vigor, the basis on which

[1] Named after General Francis Marion of the Revolution.

our political institutions had rested from the beginning, but to arouse the energies of the American mind, in the way of invention for the benefit and comfort of the race, to a degree never witnessed before; and medicine was not left in the rear of that progress.

For some years the microscope had been sporting with bacteria, but only as a biologist would scrutinize the appearance of a new species; but now bacteria began to be suspected of playing an important part in the production of disease, and forthwith the eye of almost every physician was piercing the lens to observe the habits, potency and peculiarities of these mysterious, imponderable minutiæ of life; but thus far the investigation fails to result in any satisfactory or positive conclusion. Whether the microbes are the cause or mere harmless accompaniments of disease is yet a question. However, one great benefit has already resulted; aseptic surgery, almost equal to the discovery of chloroform, has been established and healing by first intention fairly secured.

Whatever may be the final outcome of this earnest inquiry, an honest review of the last half century will show, beyond peradventure, that our profession has vouchsafed to mankind, independently of its grand achievements in the way of sanitation and quarantine, everlasting benefits entitling it to the highest honor; but when we take into consideration the fact and truth that the nation's health and vigor have, in the meantime, been fortified by medical science, against the assaults of deadly epidemics, that sacrifice so many thousands of human beings every year to the Moloch of contagion, we are startled at the magnitude of the obligation.

Public health is manifestly a matter of the gravest importance and can not be too highly regarded, for a nation, like an individual citizen, is strong and progressive or weak and inert, according to its condition of health and vigor; for a nation is only an aggregation of individuals. Look at John Bull. He dines every day on roast beef and feels buoyant, and then he bounds away into enterprise with enduring muscles and tensive nerves, hustling among the nations and beating his warlike tattoo from the rising to the setting sun. On the other hand, behold the Celestial King. He lives on a little pale rice and feels lethargic, and then he reclines in vaporous dreams to vegetate, as he has been doing for the last two thousand centuries or more. A feeble, ill-nourished people are always cringing slaves, and ill health is equally debasing to a nation.

Hitherto all efforts to guard or promote public health have been more or less due to the spontaneous intervention of physicians, supplemented occasionally by State or local authorities, but now there seems to be a reasonable demand for the general Government to recognize it as a Department, with all the functions of a Cabinet office. So mote it be.

## THE IMPENDING REVOLUTION IN MILITARY SURGERY CAUSED BY THE NEW INFANTRY RIFLE.

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Some nineteen-twentieths of all the wounds received in any modern battle are from infantry rifles, and from the machine guns. England, France, Germany, Austria, the United States, and some other nations, have recently adopted magazine guns for their infantry which can be fired sixty times in a minute, while the Gatling machine gun can throw 1,000 bullets in the same time.

A new powder is used which doubles the velocity of the bullets and is smokeless, and sends the missile over two miles; while the cartridge is less than half the weight of the old one, enabling the soldier to carry more than double the former number of cartridges.

These weapons change the conditions of warfare, so that all open ground can be swept with a storm of bullets, before which men can neither charge nor stand still. The only exception is where the country is rough enough to admit of an advance by alternately crawling through hollows, and making short rushes over narrow crests from one hollow to another.

The old charges of dense lines of cavalry and infantry over open ground are ended forever.

This new condition of things has altered the infantry tactics, so that the fighting lines are longer and thinner, the men being separated further from each other. Five thousand infantry used to make a double line of battle about a mile long. Hereafter they will extend two miles, and sometimes even three or four miles, and firing will commence as soon as men can see each other, which may be at the distance of a mile and a half. All this introduces into field surgery numerous changes which may be described under two heads: 1, surgical tactics, or the general management on the field of battle; and 2, the operative treatment required by the peculiar wounds made by the new guns.

First, as to surgical tactics: in our civil war the first aid to the wounded was given by a few assistant surgeons detailed to accompany the "line of battle," or "the fighting line," as it is now called. Each of these officers served from three hundred to a thousand men, giving temporary aid, but not attempting important operations; and sending the wounded back on foot or on litters to the field hospitals, whenever a lull in the firing permitted it. As the lines will hereafter be stretched out to such a great length, it is probable that the extreme right and left of the assistant surgeon's charge may get beyond his reach, and more medical officers will be needed at the fighting line. However, the increase may not be very great, owing to the modern plan of "first aid" service. Four privates in each company are instructed by the surgeon in weekly drills. They are taught the art of stopping hemorrhages, of dressing wounds and fractures, of lifting and carrying men on stretchers, on extemporized litters, on their own backs and on horses or mules, and are trained in various other matters concerning "first aid." Each of them carries in his hip pocket a small "First Aid Package" containing a little sublimate gauze and a triangular bandage, with printed directions on the wrappers, and pictorial illustrations on the bandage, to assist the soldier's memory. In battle these privates act as fighting men until ordered to collect the wounded, or otherwise attend to them, when they lay down their guns and proceed to their work, the rest of the company being forbidden to leave their posts.

This weekly drill has as yet been introduced into only one post of our army, which is Fort Sheridan near Chicago. There Surgeon-Major Girard has inaugurated the plan in full form. It is not yet

decided how long it is best to continue the education of each squad. Some advocate changing them often, so as to gradually bring the whole company under the training. It is obvious that with the help of these educated privates the assistant surgeon at the front can serve a longer line of battle than formerly.

The assistant surgeons at the front select places for "First Dressing Stations" near the fighting line, and the instructed privates conduct or carry the wounded there whenever a lull or a cessation of the firing permits. Until then the wounded should lie flat on the ground where they are, or get behind any available shelter. The wounded being temporarily cared for, the instructed privates return to the fighting line.

The assistant surgeons examine the wounds and dressings and correct any error or omission. Farther to the rear, as near as the fire of the enemy and the topography of the ground permits, the ambulances are assembled under the charge of a line or staff officer, subject to the orders of the surgeon. Here at the beginning, the "Hospital Corps" is stationed. This consists of hospital stewards and privates enlisted for this special work, to the number of four for each battalion of troops. They are not combatants. They are thoroughly trained and wear the red Geneva cross upon the left arm. By the comity of all civilized nations they are never to be intentionally fired on, and never to be taken prisoners, so that they are safe everywhere except when exposed by the actual operations of the fighting lines against each other. In Mohammedan countries the badge is a red crescent, which gives the same protection. Each of the Hospital Corps carries a pouch containing the following articles, viz.:

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| Ammonia aromatic spts., 1 oz. | Petrol. carbol. ½ oz. |
| Bandages, roller, No. 4. | Pins, common, 1 paper. |
| Candle in tin box, No. 1. | Pins, safety, No. 6. |
| First aid packet like that of the instructed privates, No. 1. | Plaster, adhes. 1 spool. |
| Forceps dressing, No. 1. | Scissors, medium, No. 1. |
| Iodoform sprinkler, No. 1. | Splints, wire, No. 2. |
| Jackknife, No. 1. | Sponges in bag, No. 2. |
| Lint, cor. subl., 2 oz. | Thread, linen, 20 yds. |
| Needles, medium, 1 paper. | Tourniquets, field, No. 2. |
| | Wool, boracic, 2 oz. |

The Hospital Corps, thus equipped and provided with litters, moves forward leaving the ambulances at the nearest safe point, meets the instructed privates at the front and carries back all the wounded not able to walk to the ambulances, and places them in the vehicles. They are thence carried back to the field hospital. This is a spot selected so as to be if possible, tolerably safe from fire, in proximity to water, and in winter sheltered from cold winds. In settled countries, houses or barns can be utilized. The medical officers not detailed to accompany the fighting line are assembled at the field hospitals, or "field depots" as they used to be called, where the operations are performed, and the wounded in other ways more completely provided for than at the front. As the fighting lines will be more than double in length and in large armies may extend fifteen or twenty miles, the field hospitals will have to be more numerous than formerly, and have fewer surgeons at each. From these, the ambulances come and carry the wounded to camp or to any place desirable.

Owing to the awful sweeping fire of the long range weapons, the field hospitals will have to be farther to the rear than formerly, unless there are hollows, ridges or breastworks admitting of nearer shelter. In level, open ground, they may have to go back as far as one or two thousand yards. This necessitates a great increase in the labor of bringing back the wounded on litters, for it must be remembered that in open ground ambulances can not approach the fighting line, as horses, drivers and wounded will all be killed. Ambulances can not lie down when the gusts of firing become hot.

The following diagram illustrates the relative positions of the fighting line and the stations, but not the distances:

This arrangement of four "first aid men" in each company, supplemented by the Hospital Corps, will place the surgical tactics in a far more perfect condition than in former American wars, where the surgeons had no help in the field except a very few hospital stewards and some blundering, untrained musicians, spared from the front because they could not fight. The Hospital Corps, including stewards, acting stewards and privates, but not including the instructed privates of the fighting line, constitute about 2 per cent. of the entire army.

The steward ranks above the first sergeant of a company and has a pay of $50 a month; assistant stewards have $25.

In peace the Hospital Corps is on duty in the camp and post hospitals.

The assistant surgeons on the fighting line have each an orderly carrying a pouch filled with surgical supplies.

The United States have been slow to adopt the magazine guns, but at last have aroused themselves to the necessity of it, and have selected the Krag-Jorgensen rifle, which is a new repeater, throwing a small projectile much like those already introduced in European services, but in several respects superior to any of them.

Before discussing the new wounds and their treatment, let us compare the old and the new bullets.

When our civil war commenced, our army used the old Springfield muzzle loader. The bullet was conical and had a diameter of fifty-eight hundredths of an inch and a length of about one inch, and was fired at a velocity of about one thousand feet a second. At the close of the war, breech loaders were intro-

duced, and the caliber was reduced to forty-five hundredths of an inch and the velocity was increased to 1,300 feet a second, but except in size the bullet remained without essential change.

The older of these bullets produced wounds of a character peculiar to themselves. Being large in size and slow in velocity, their effect on striking a bone was to produce a great shattering, while the missile, crashing through the mass of loosened bits of bone, flung them violently in every direction almost as if an explosion had occurred in the middle of the limb. If the shaft of the femur were struck it was often comminuted for several inches. If the bullet traversed the condyles of the femur, or the head of the tibia, half the knee joint was instantly reduced to a mass of bony gravel. These wounds were of the most frightful character, and in the field of my observation about half the cases of shattered femur died of shock by the end of the fourth day, whether amputated or not.

Fig. 1.

Fig. 2.

Fig. 3.

When the caliber of the rifle at the close of the war was reduced to 45, the shattering was less, and the shock probably diminished, but in the main the wounds partook of the same general character.

The Krag-Jorgensen gun, and others of like type, produce very different wounds, and this difference will revolutionize certain parts of war surgery. Smokeless powder is used, of such a strength as gives the bullet a velocity about double that produced by the old cartridge; that is to say, about two thousand feet a second. The bullet is about an inch and one-third in length, and only thirty hundredths of an inch in diameter, being about as large as a good-sized lead pencil. It consists of a casing of thin steel, or of German silver, filled with lead and nickel plated. This casing with a harder metal than lead is to prevent "stripping" in the grooves of the rifle. Its surgical effect is that the bullet goes straight through a bone without being spread and flattened out of shape, and consequently with less tearing and shattering than the old projectile.

Fig. 4.

Fig. 5.

Fig. 1, shows the large bullet used in our civil war, Fig. 2 the 45-caliber used since, and Fig. 3 the new projectile now coming into use.

The old lead bullets were deformed into every possible shape on striking bones. This spreading out of the lead greatly increased the shattering of the bone, and the tearing of the soft tissues beyond it.

Fig. 4, shows a spent bullet which I cut out from under the vastus externus muscle, where the concavity of the distorted bullet rested on the outer side of the shaft of the femur, not having velocity enough left to shatter the bone.

Fig. 5, represents an old-fashioned globular bullet which I removed. It had struck a bone and was cut and spread open into a very singular shape.

Dr. Louis A. La Garde of the United States Army, has studied the effects of the new projectile upon cadavers. His experiments show that they are rarely deformed, but go straight through the bones without being altered in shape, or deflected from their course. In one single instance, however, the lead broke through its hard metal casing and separated from it.

Pure lead bullets are often cut and rasped into several pieces by the sharp projections of the fractured bones, and the metallic fragments diverge widely from each other.

This comminution of the lead has given rise to a conjecture that the sudden stoppage of the motion converted the energy of the bullet into heat and melted it, causing the molten mass to be splashed about in all directions. There is no proof, however, that such is the case. I have taken out a great number of deformed and comminuted bullets, and never found a single one which presented any of the forms characteristic of molten lead. The angles are sharp, the surfaces are scratched, and there is a total absence of any of the burnt appearances which molten lead would produce.

Moreover it is impossible to generate a melting heat in that way. Mr. Victor Windett, an eminent mechanical engineer, has calculated for me the temperature possible if all the energy of the projectile were suddenly transformed into heat, and he finds that though the heat would be theoretically sufficient, if the energy at the instant of leaving the muzzle were all expended in heating the lead, yet this complete conversion is impossible. At high velocity a large force is lost in the resistance of the air. On striking the body most of the remaining energy is lost in perforating and shaking the tough tissues, and rending, shattering and dispersing the bony fragments, so that the proportion of heat left for melting is too small. Beck of Europe, has also made the calculation, and found the same result. The theory is therefore untenable.

The most important thing from the surgical point of view, is the changed character of the wounds, made by the new projectiles, and the consequent modifications which will ensue.

So far as the old weapon is concerned, I have made numerous experiments on the cadaver with the Springfield army rifle, choosing the old pattern (caliber 58), as well as carefully studying the wounds in field surgery during the late war.

Several varieties of the new gun have been tested on cadavers by Dr. La Garde of the United States Army, and by Beck, Delorme, Langier and Roget of Europe.[1]

These investigations show the following facts:

1. In a general way, we may say the old gun tears and shatters; the new one pierces.

2. The old projectile creates more shock and "stops" a wounded man more effectually; the new one causes less shock and less injury.

[1] Fractures Experimentales par Delorme, Traité de Chirurgie par Duplay et Reclus. Traité de Chirurgie d' Armée par Chauvel et Nimier, etc.

However, it is necessary to qualify these broad statements somewhat by the following observations:

The new gun starts its slender projectile at a velocity of 2,000 feet per second. If it strikes a human body within the distance of about three hundred and fifty yards it tears and shatters almost as badly as the old gun of 58-caliber. European experimenters seem to suppose that this is partly peculiar to the new weapon, and speak of the effect as a "genuine explosion," an "explosive effect," etc. However, they have not figured nor described any shattering which was not familiar to us in the wounds made by the 58-caliber projectile in our late war, but there is this difference: the old conical 58 bullet shattered at all distances, so long as it had force enough left to break the bone; the 45-caliber had less of this so-called explosive effect, while the new 30-caliber ceases to shatter extensively at about three hundred and fifty yards, and produces more of a perforating wound, and continues in that style up to about one thousand eight hundred yards. Beyond that distance, the shattering effect is resumed, which is a singular fact and one difficult to explain. As nearly all wounds will occur between the distances of 350 and 1800 yards, it follows that in future wars most of the lesions will be of a perforating rather than of an "explosive" character.

Fig. 6.

Fig. 6 shows a perforating wound of the tibia, sketched from one of Dr. La Garde's specimens.

Fig. 7 is from one of Delorme's illustrations. Both show the singular perforating power of the new bullet.

In contrast with these, we may illustrate the "explosive effect" of the old 58 projectile. The cut is a diagram rather than a portrait of any one case, but it shows the effect which we so often saw in battle during the days of the 58-caliber gun. The cut represents by a shaded strip the track of the bullet through the condyles of the femur, and the appearance of the condyle if we suppose the fragments to be all replaced in position. As a matter of fact, however, they all lay loose in the capsule in the form of a great double handful of bone gravel, constituting a frightful injury.

In future fighting, most of the wounds will occur at the perforating, and not at the shattering distance, so that field surgery will have to deal with new conditions:

1. The wounds being smaller and less shattering, shock will be less and the missile will generally go through the body, and not require to be extracted.

2. The bullet being so small will have much less tendency to carry in with it patches of septic clothing and skin, and any bits that are lodged in the track of the wound will be so minute that a deep flushing of the wound with antiseptics will often sterilize the injury.

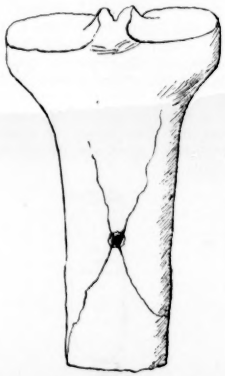

Fig. 7.

3. In cases where there is actually some chipping of a joint surface it will be possible to open the joint on the field, pick out the fragments, sterilize the cavity and close it up, thus avoiding amputation.

4. It will in future be possible to avoid a large portion of the amputations and excisions, which were formerly necessary.

5. In perforating wounds of the abdomen, the tearing of the hollow viscera will be much diminished, giving a hopeful opportunity to save life by laparotomy on the field.

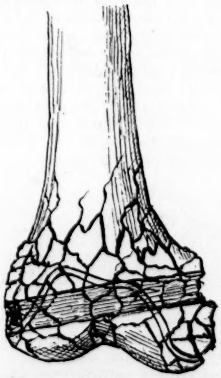

Fig. 8.

6. As prompt antisepticism of the wounds will be important, the hospital corps will have to be instructed how to do it before they bring in the patient.

7. The dispersion of the wounded over wide areas will increase the difficulty of prompt "first aid."

8. Field surgery will be more scientific, and require a greater variety of operations, hence the poverty stricken little cluster of instruments formerly furnished by the Government to field surgeons must have additions adapted to the new exigencies of the battle-field.

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## MEDICAL EDUCATION.

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The present is a time of evolution and change in the methods of medical education. The country has outgrown the old system which was the best that could be provided for the hungry boys who could hardly keep soul and body together during a term of sixteen weeks of exclusion from the maternal pantry. Thus far the progress that has been made is in the way of real improvement. It might have been much more rapidly effected had the pecuniary endowments of medical education been established upon a broader foundation; but, taking everything into consideration, the teachers of medicine throughout the country have accomplished all that with their limited resources was possible. We have reached the point where eight or nine months' sessions are required at the leading medical schools, and four years of study are requisite for graduation. The next step in advance will consist in the enforcement of attendance upon four courses of medical lectures delivered during the four consecutive years of medical study. This arrangement will render it possible to adopt a course of study that shall be complete and easy of apprehension, instead of the unphilosophical curriculum covering only three years, during the second year of which the belabored student is struggling to finish his preparation in the elementary branches, and at the same time striving to cope with the advanced subjects for which he is not sufficiently equipped.

But with the adoption of the four-year course, no such helterskelter method need be followed. The first two years should be devoted to the study of the science of medicine, and the last two years to the art of medicine. The great object during the first two years should be the acquisition of a sufficient practical acquaintance with that body of classified knowledge which we now possess regarding the structure and functions of the body, and the active agents that modify that structure and function in health and disease. For this purpose the student should be carefully trained to use his powers of observation in the dissecting room and in the laboratories, where histology, physiology, chemistry, medical physics, bacteriology and materia medica are taught. This will consume the working time of two full years. Inasmuch as many of these subjects are admirably taught in the literary colleges and scientific schools of the country, the graduates of such schools and colleges may very properly be admitted to the second year of the medical course. This is additionally desirable for the purpose of attracting to the medical profession many highly educated young men who might be repelled by a requirement that they must spend a year in reviewing what they have already sufficiently studied.

Having thus completed two years in the study of the elementary branches, the student should be examined, and only if duly qualified, should he be permitted to advance to the study of the art of medicine. Progressing in the philosophical order he should now be made acquainted with the visible and tangible forms of injury and disease. In other words he should begin the study of surgery. This should be taught in all its branches, including the principles of surgery, injuries, skin and venereal diseases, eye and ear diseases, surgical diseases of the respiratory passages. Obstetrics may now be fittingly taken up, and the principles of medicine should receive attention. Finally, those topics which require the largest experience, observation and power of intellectual discrimination should engage the attention. These are the practice of medicine and surgery, gynecology, medical jurisprudence, state medicine, mental diseases and therapeutics. The following schedule will readily exhibit this classified arrangement of subjects:

FIRST YEAR.

| | |
|---|---|
| Anatomy, | Chemistry, |
| Physiology, | Medical Physics, |
| Histology, | Materia Medica, |
| | Dissections. |

SECOND YEAR.

| | |
|---|---|
| Anatomy, | Chemistry. |
| Physiology, | Toxicology, |
| Bacteriology, | Hygiene and Climatology, |
| | Dissections. |

THIRD YEAR.

| | |
|---|---|
| Principles of Surgery, | Principles of Medicine, |
| Pathological Anatomy, | Skin and Venereal Diseases. |
| Eye and Ear Diseases, | Orthopedic Surgery, |
| Therapeutics, | Surgical Diseases of the Respiratory Passages, |
| Dental Pathology, | Physical Diagnosis. |

FOURTH YEAR.

| | |
|---|---|
| Practice of Surgery, | Practice of Medicine, |
| Gynecology. | Nervous Diseases, |
| Mental Diseases, | Therapeutics, |
| Medical Jurisprudence, | State Medicine. |

But even the most scientific classification of medical studies will avail little if the method of instruction be faulty. The day has gone by when medical students could become learned physicians by absorption of knowledge from the atmosphere of a lecture room that had been impregnated by the breath of an eloquent professor. Like all other students, medical students must acquire knowledge for themselves by diligent work in the laboratory and recitation room. During the first and second years the greater part of the time should be passed in the dissecting room, in the chemical laboratory, in the laboratories of histology, bacteriology and pharmacy. Instead of considering their duty fully performed by a voluble description of the sphenoid bone, or a dissertation upon the functions of the supra-renal capsules, the professors should be sparing of lectures, and should confine their didactic efforts to the demonstration of such objects and experiments as can not be readily performed by the students themselves. With each professor should be associated a sufficient number of tutors whose office should be the hearing of regular recitations upon the topics assigned by each chair. Every student should be required to attend these recitations, just as if he were a freshman or a sophomore in a literary college. In this

way, accuracy of knowledge will be insured for the student, and for the tutor experience in the art of teaching. At the end of two years, if his examinations are satisfactory, the student may be allowed to commence the study of the art of medicine. During the next two years instruction by recitation should be continued by the tutorial staff, while the professors of each department should confine themselves chiefly to the supervising of the work of their subordinates, and to clinical instruction of their classes in the clinical amphitheater or at the bedside. At the end of the third year the qualifications of the class should be fully ascertained, and no one should be permitted to enter the graduating class in the fourth year until he has given satisfactory evidence of sufficient preparation for such candidacy. In this way it will become possible to avoid many of the ruinous disappointments which now occur, when all sorts of loose fish are coaxed into the graduating net only to be rejected at the final examination. The sifting of students should precede their matriculation, and should be continued during the whole of their course, instead of being postponed till the final examination, leaving the unfortunate dullard in ignorance of his fate till time and money have irrevocably vanished, with nothing to show in exchange for the sacrifice.

## A REMINISCENCE OF THE NICARAGUAN FILIBUSTERS.

BY L. C. LANE, M.D.
SAN FRANCISCO.

Aceptó con gusto la leche, queso y pan de maiz que le ofrecieron: mientras él devoraba estos manjares, ocupado esclusivamente en satisfacer la primera necesidad de la naturaloza, no se caraba de modo alguno de sus discursos.

(He accepted with pleasure the milk, corn bread and cheese which they offered him, and while he ate this food, occupied wholly in satisfying the first wants of nature, he took no heed of their discourse.)—From Camço Alange's Novela: "Pamplona y Elizondo."

When an Assistant Surgeon in the United States Navy, in 1858, and connected with the sloop of war *Decatur*, the writer was on the western coast of Central America, at the close of General Walker's invasion of Nicaragua. The older reader will remember this freebooting expedition, which was composed of bold, reckless, fearless and unscrupulous fortune hunters; and whose operations, as was evident to the writer, had the sanction of President Buchanan's administration, and the aid of the Navy, as far as it was possible to go without arousing international suspicions. And in this movement the sloops of war *Decatur* and *St. Mary*, and frigate *Merrimac*, so famous afterward in the Confederate service, quietly acted their respective parts. These vessels were moving from port to port for the purpose of aiding or protecting Americans who might be found in distress.

On the arrival of the *Decatur* at Punta Arenas, the Pacific port of Costa Rica, our commander was informed that a body of American filibusters, who had been conquered by the Costa Ricans, were held as prisoners at that place. These men were young; few of them had reached the age of 30 years; they were half naked and of cadaverous paleness, for in their blood, to an undue measure, the leucocyte had replaced the red globule. As prisoners, they were fed by the Costa Rican Government; and for this purpose were provided for in the manner which the robber would usually receive from him whom he had failed to rob, viz.: they were each given a dime a day with which a sufficiency of bread, bananas and plantains could be purchased to stave off, or rather prolong, starvation. And as dessert, each evening their eyes feasted on a sunset picture unequaled by nature or painter in Italy. It is probable that in that scene of sublimity, cloud-forms tinted with opal, amber and rose, did little towards appeasing the fierce qualms which tormented those starvelings.

The predominating diseases of these men, apart from numerous minor lesions received in sacrificing to Venus, were malarial fever and an ulcer of peculiar and unusual characteristics.

The fever was of remittent or intermittent type, and was much milder in form than that which occurs at the North in the robust subject who has been exposed to malarial influence. From the writer's observation every white immigrant from the temperate zone to Central America soon fell a victim to this fever. After a few years' residence there they became emaciated, bloodless and spiritless. A few succumbed at once and died soon after arriving in the country. A Minister to Guatemala from the United States died in two weeks after reaching his destination. To live there the Northerner must be provided with quinin, and from time to time, take enough to counterpoise the malarial poison with which he is becoming saturated.

The ulcers with which the filibusters were affected were seated chiefly on the arms and legs, and their causation and commencement were to be found in some lesion which was of a trivial nature; for example, the prick of a thorn, the bite of an insect, and in a few cases the wound had arisen from a knife-thrust or gunshot missile. In the Central American forest one encounters at every step trailing vines and shrubs which are armed with small spines or thorns, the contact with which lacerates the skin. And in these men such wounds quickly enlarged, and assumed the form of an unhealing ulcer.

These ulcers presented characters which the writer has not seen elsewhere. They consisted of half-formed tissue which, in the exuberance of its growth rose two or three lines above the adjacent surface. They were of a pale yellow color, and so non-vascular that when touched they did not bleed. This pseudo-formation differed widely from any form of granulative tissue, and in appearance it resembled a thick emulsion rather than an organized animal tissue. In fact, it was a new type of structure, so low in organization that it was the analogue of a fungoid plant, and was no more sentient than the latter. This fungoid neoplasm had arisen in the human body that was saturated with malarial poison, half starved and living on a non-nitrogenous food.

The commander of the *Decatur* gave orders that a few of these men who were in the worst condition should be taken on board and cared for. A small number were selected, and were given treatment. Little was done except to place them on the man-of-war's rations, and under this improved regimen, and simple cleanliness, the ulcers vanished like magic. These cases afford an illustration that food and not medicine may give health to the sick, reversing the initial sentence of Celsus.

Of the men who were left ashore in Punta Arenas, a considerable company took a large boat and came alongside of the *Decatur*, hoping thus they would

also be received. When denied permission, these men indulged in profane comments against our commander and the United States, in the form of studied curses which would have shocked even ears which had become obtuse to marine blasphemy. Volleys of imprecations were heard which reverberated back from the neighboring Cordilleras; and, borrowing the words of the Homeric Muse, they resembled that shout

"That moved Heaven's concave and above
Shook the fixed splendors of the throne of Jove."

Or perhaps their action were better expressed in the words of Virgil's suppliant: "*Flectere si nequeo superos. Acheronto movebo.*"—(If I can not move heaven I will try hell.)

The men who remained at Punta Arenas, after a longer or shorter sojourn, either died or managed to escape, and in their invasion of Nicaragua they learned, or taught others, the lesson of the embarrassment which may beset the attempt to conquer a Central American republic; and that the latter, though weak in military resources, has numerous other allies in the pricking thorn, the stinging ant, the chigoe, the vertical sun-ray, and of potency equal to these, the atypical ulcer and the microphyte of malarial poison

## TREATMENT OF SEA SICKNESS.

BY M. CHARTERIS, M.D.
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### SEA VOYAGES.

Sea life is not new to me. I commenced my professional career by acting for nearly two years as Surgeon in the Peninsular and Oriental Company's service, and my autumnal holiday since then has never appeared to me to be satisfactory or complete, unless part of it has been spent on board ship.

I never was seasick. I love the sea in its calm and pleasant mood, when the waves lazily lap the steamer with the kiss of friendship, and I am not distressed when they turn upon it as an intruder and lashed by the fury of a storm seek to bury it in the ocean's depths. In all its moods, bright or dark, the sea has for me a wonderful charm, for I admire its vastness, its grandeur, and its boundless power, except when the fog horn is heard or an iceberg looms in sight.

So when I had the honor of being placed upon the Advisory Council of the Medico-Climatological Section of this great Exposition I elected to address you upon a subject with which I was very familiar—sea voyages.

### INFLUENCE OF A SEA VOYAGE IN CERTAIN DISEASES.

The sea atmosphere has certain marked features. It is pure, it is equable. There is freedom from the risk of chills when on deck. Day by day the traveler breathes in saline particles, abundance of ozone, a slight quantity of bromin and iodin, and all these tend to have a salutary action on the general system. By increased appetite and good digestion the health improves, and this improvement is manifested by gain in weight, by a better color, and by more bodily vigor.

In causing increase in weight, the ocean climate surpasses all others, and it is not uncommon in a long voyage to find that a man increases more than fourteen pounds in weight.

In what cases, then, is a sea voyage to be recommended?

We would answer this inquiry by stating:

1. That it is very serviceable in certain pulmonary affections. The moist atmosphere does good in chronic bronchitis with little expectoration, for it tends then to relieve the dry cough by relaxing the bronchial tubes.

In chronic pleurisy it appears to facilitate absorption and in chronic empyema it effects a marvelous change. Empyematous patients have embarked with drainage tubes in their chests and in the course of the voyage the discharge gradually ceases, and the cavity granulates up sufficiently to allow of the removal of the tube.

The late Dr. Walshe stated: "A sea voyage, especially in the case of young adult males, will occasionally work more effectual change in the phthisical organism, than any other single influence, or any combination of influences with which I am acquainted." The experience of many observers has confirmed this opinion, and it is now an acknowledged fact that the progress of tubercular mischief in the early stage can be completely arrested by a timely and prolonged voyage.

Experience has also shown that a voyage does good in cases of phthisis when there is a single cavity without great local irritation, and that it is very beneficial in that form of phthisis which is seen with scrofula.

2. A sea voyage operates like a charm in the case of patients recovering from acute dysentery, and in aiding convalescence from an acute inflammatory affection. The recuperative efforts of nature are then assisted by the exceptional advantages of an unsurpassed atmosphere and by an improved digestion. So, also, in the various sequelæ of influenza, a sea voyage is unquestionably a better remedial agent than any drug or combination of drugs that can be prescribed.

3. In chronic Bright's disease, if it be not marked by much loss of albumen, the regular diet at sea, the systematic exercise on deck, the impossibility of any chill being caught there, combine to make conditions which render recovery more possible than any residence on land can effect.

4. Above all, a sea voyage is the unquestioned cure for nervous derangements which result from over work and are attended with sleeplessness. In a voyage there is leisured recreation. There is an unequalled holiday. There are no business cares and no professional worries. There is complete physical rest which in the end brings gradually but surely mental repose. Soothed by the breezes of the ocean, a tired man, professional or mercantile, acquires a new physique, while real or fancied ailments disappear under a tonic which art can never supply.

### THE GREAT DISADVANTAGE IN SEA VOYAGES IS SEA SICKNESS.—ITS NATURE AND SYMPTOMS.

In these, and other diseases mentioned, physicians recognize that the sea air and the mode of living at sea are potent therapeutic agents. Yet many physicians justly hesitate to recommend its adoption and many patients, even if it be recommended, hesitate to undertake a voyage, from dread of the familiar physical disturbances associated with the sea.

In advising a voyage, sea sickness can not be ignored, and unconquerable sea sickness is acknowl-

edged by authorities to be a circumstance counter-indicating a sea voyage. So, also, is a tendency to hemorrhage.

We will show, at a later stage, that these contra-indications no longer apply, and give proofs of our statement.

Meanwhile, we may digress for a little and ask, What is the history of mal de mer, in general literature and professional, and what means have been suggested to ward off an attack or to give relief from it if it has begun?

If we turn to general literature we find that among ancient authors, Plutarch first alluded to it. Cicero, also, in feeling language told his experience, and resolved that he would rather fall into the hands of an executioner, than again pass through the same ordeal.

The author of "Tristram Shandy" very happily and very racily described its depressing cerebral effects, and Shakespeare in inimitable words mentions "the quite, quite down feeling." While Browning terms it, "the swooning sickness on the dismal sea."

No extensive bibliography in medical literature exists on the subject, and we only find descriptions of its nature and treatment in scattered pamphlets.

There can, however, be little doubt of the "quite, quite down feeling" with which it begins, and which culminates after more or less prolonged intervals in vomiting as a rule, at first, with little effort. The stomach must be emptied and its contents are evacuated, with little regard to time or place or to appropriate receptacles conspicuously evident on the deck or in the cabins of the steamer.

This may be termed the first stage of sea sickness, and is followed in many cases by a *second* stage, when the vomiting is succeeded by retching and by great physical and mental prostration. The afflicted person, no longer able to maintain the erect position, lies half asleep, half awake, dozes and dreams and the dreams are not pleasant.

Many explanations have been offered in later years of the nature of these symptoms; some of these proceeding from men who have had some experience of the sea, or from men who have had no experience at all.

With the latter we have nothing to do, but with regard to the former we may say that the controversy ranges between advocates of the central origin of sea sickness in the vomiting center in the medulla, and those who contend for a stomachic origin. The latter origin certainly accounts for the nausea and the vomiting in the great majority of cases, and for the shortness of the attack. Thus an infant at sea becomes sick, but when vomiting takes place the sickness is over. A steerage passenger becomes sick but in the course of twenty-four hours the sickness is gone, and there is no after depression or retching. A cabin passenger is more affected than a steerage passenger but yet, as a rule, he is able in the course of two days to take his seat at meals.

Yet we know that with a few passengers the ordeal is severe and protracted, and that recovery only takes place at the end of seven or eight days. The irritation of the stomach here does not explain the prolonged period of their illness, and we can only account for it by supposing that the stomach disturbance has given rise to reflex action, which implicates the medulla and the whole cerebro-spinal system. Hence the indescribable misery of the wretched sufferer who, at this period, would often welcome death as a glad relief.

This attack of the whole cerebro-spinal system is most apparent, to use an American expression, in "brainy" people, whose nervous organization is highly strung, and whose mental activity is great.

We must also concede that in some cases the irritation proceeds from the brain, as a whole, for we know that the very thought of going to sea may occasion a peculiar terror, which is followed by headache, distress and an over-mastering weakness.

Henry Ward Beecher, the great American pulpit orator, relates that, "many years after his first voyage across the Atlantic, he heard some sailors in a Brooklyn dock singing the same old 'Chanty Song' that he had heard when ill at sea, and that the mere listening to it produced the creepy feeling of sea sickness."

So, also, a boatswain's whistle, by an association of ideas arouses in certain individuals unpleasant sensations, and some naval officers feel remarkably queer, on the reception of orders to proceed to sea.

Three years ago, when standing on the deck of the little steamer, which was about to start from Penzance in Cornwall, to the Scilly Islands, I observed a very striking instance of this cerebral irritation. A cab drove hurriedly up to the pier and from it alighted a lady and a gentleman. The moment the lady saw the steamer she became pale, staggered and caught the gentleman's arm, and could be induced by no persuasion or coaxing to step on board.

If we consider this, and other evidence which might be adduced, we are forced to the conclusion that the causation of sea sickness is complex. We contend however:

1. That the vomiting is due to gastric irritation proceeding from the stomach.

2. That the retching and mental depression indicate the further implication of the whole cerebro-spinal system.

3. That in exceptional cases, it depends primarily on cerebral causes.

### REMEDIES TRIED IN SEA SICKNESS.

We have spoken of how sea sickness is mentioned in general literature, and we also find in this literature some allusions as to its cure. Bacon extolled a liver pad and Shakespeare tells in "Cymbeline," how the fair heroine, "Imogen," before she proceeded to seek out her lover in Italy, received from her attendant a certain cordial. "If you are sick at sea," he said, "a dram of this will drive away all distemper."

She did not proceed to sea, but, when wearied by troubles on land she remembered the advice and took the cordial, and she fell into a sleep so deep and so lasting that it simulated death. Doubtless it contained some narcotic, but what this was the great dramatist does not reveal.

Some cures advocated we find to be nothing short of heroic. Long ago green midshipmen in the English navy had a rope's end applied to them, and sea sick men on board whaling vessels had buckets of salt water dashed over them.

Boys on board training ships when sick were supported in each case by two other persons, and had to walk the deck and swallow occasionally spoonfuls of hot soup until they got well. In medical literature

we read of many remedies, but we shall only mention a few of these. Dr. John Chapman of Paris, attributes the malady to cerebro-spinal congestion, and recommends an ice-bag to be applied to the spine. Cocain, nitrite of amyl, nitro-glycerin and antipyrin have each had their advocates, but experience has proved their action to be evanescent.

The vomiting is often allayed by lying down and by swallowing small quantities of iced champagne, but the same thing can not be said of brandy and soda water, which only tends to heighten the gastric irritability.

In the last few years there has been a growing belief in the administration of sedatives, with the object of securing rest and sleep, and this indeed is the only true and rational method of treatment, for it strikes at the root of the malady in the *second* stage. Sleep gives rest to the mind amid the worries of life on land, and in allaying the troubles of the sea its action is no less efficacious.

But with most drugs employed, sleep so desirable can only be obtained under such manifest disadvantages that their use at sea is forbidden. Opium secures sleep, but as on land so also at sea, the patient awakes with furred tongue and loss of appetite.

The hypodermic injection of morphin induces sleep, but when injected in a case of sea sickness it often appears to intensify the gastric irritability and to increase the vomiting.

Hydrate of chloral, though it produces sleep has, as is well known, when administered in any disease a depressing influence on the heart; accordingly since in sea sickness the action of the heart is weak, and the general system is not in its normal condition, one can have no hesitation in affirming that its use in such cases would be hazardous in the extreme.

Paraldehyd is undoubtedly a safe and valuable hypnotic, but its nauseous taste and its persistent odor render it useless in sea sickness.

Sulphonal is out of court for this malady, because of the length of time which elapses before its hypnotic influence is exerted, and because the patient, who has used the drug has on awaking from sleep, an unsteady gait coupled with general confusion of ideas.

In fact, the only hypnotic we can safely employ in sea sickness is bromid of potassium, but when it is given in a hypnotic dose of 30 grains it is often immediately rejected by the stomach. Yet when retained it is a most efficient remedy, and where its bitter taste has been effectually disguised I have observed distinct benefit to follow from its administration.

I may here interrupt my remarks to observe that it has been vaunted as a prophylactic in sea sickness, especially by Beard of Boston. He recommends its administration for some days before going on board, in such doses that its physiologic action—bromism—should be established. But bromism is associated with mental incapacity, and the passenger thus half asleep and half awake, unable to look after his own affairs or to converse with ship officers or friends, would be a spectacle for gods and men. The cure would be worse than the disease, and therefore we think as a prophylactic in such doses bromid of potassium can not be recommended.

I have said that bromid of potassium, when retained had, in the experience of others and of myself, been found to be an efficient remedy, and my reflections upon this efficacy led me to consider in what manner its sedative influence could be enhanced by another hypnotic at once potent and safe.

CHLORALAMID.

I satisfied myself by asylum, by hospital and by private practice that chloralamid had all the advantages and none of the disadvantages of hydrate of chloral. It secures sleep by its action on the cerebral cortex and has but slight influence on other parts of the nervous system of voluntary life. It has no direct action upon the heart or circulation. It does not reduce arterial pressure and its administration is not attended with any disorders of digestion or with any depression.

I found also it could be rendered soluble in certain proportions by rectified spirits, and that this solution was not altered by the addition of bromid of potassium.

The attention of the makers of chloralamid was drawn to these facts, and subsequently Messrs. Burgoyne & Co., London, submitted to me a solution termed

CHLOROBROM

which contained in each ounce 30 grains of chloralamid and 30 grains of bromid of potassium, with other ingredients which assisted their action and made the taste pleasant.

In my own country this solution has been extensively tried in asylum practice during the last twelve months, and the trials have been eminently satisfactory in various forms of mental disease, notably in melancholia and in the insomnia brought on by overwork.

This solution is stable, palatable, potent and safe, and as evidencing its safety it may be stated that 18 drachms have been given to an asylum patient suffering from aortic incompetency, and with no bad results.

TESTIMONY OF SHIP SURGEONS AS TO THE EFFICACY OF CHLOROBROM IN SEA SICKNESS.

In the autumn of 1891 I had opportunities in a trip across the Atlantic of testing chlorobrom, and I found that when vomiting had been succeeded by retching, its effects were speedily manifested. When administered at this point it was in no case rejected and after a dose varying from six to four drachms, sleep which lasted from six to eight hours, invariably followed. To make assurance doubly sure, it was submitted for trial to ship surgeons who had charge of steamers sailing from Great Britain to various ports.

I have before me evidence and reports of fully 100 cases where it was tried in the second stage of sea sickness. These all show that its action is most satisfactory, that it possesses the inestimable advantage of being retained by the stomach, that it insures sleep of six or eight hours duration and that it leaves the patient free from headache and possessed of a good appetite. The dose administered was in the quantity mentioned, in six to four drachms, but this quantity may, I consider, be judiciously divided so that a teaspoonful may be taken every five minutes. When the retching is very severe this division appears to be preferable.

It seems to be unnecessary to give the reports in full, and I shall content myself by submitting one from Dr. Macdonald of the Anchor Line Service, which was published in the *British Medical Journal* of September, 1892:

"After a series of careful trials, extending over two voyages to and from New York, I can testify to the efficiency of chlorobrom in cases of sea sickness. During my experience at sea, I have prescribed almost every reputed remedy, including cocain, antipyrin, nitro-glycerin, quinin, etc., but with insufficient and uncertain results in most cases.

"Of late it has been my custom to prescribe a mixture of bromid of potassium and spirits of chloroform; this I found to be of considerable service, but unfortunately like most remedies administered by the mouth it was exceedingly liable to be rejected by the stomach.

"Chlorobrom, however, to my knowledge has never been rejected, and has seldom failed to relieve the gastric disturbance and nausea. It produced sleep from which the patient awoke with a clear head, a good appetite, and remarkable freedom from most symptoms which were so painfully evident prior to the administration of the solution. Its perfect safety, agreeable taste, and freedom from disagreeable after effects, all combine to render it an admirable preparation and an ideal sedative.

"As illustrating the benefit from its use I select one case, when *mal de mer* was complicated with a history of gastric ulcer. Unless the solution had been retained I believe there would have been great danger of perforation of the wall of the stomach from the excessive retching.

"On the second day after leaving port, I was called to see Miss C., age 22, and found she had been very sick since the steamer started. There was continuous retching with headache, sleeplessness and great depression. She was markedly anemic and very weak. The peculiar "coffee ground" appearance of the vomited matter attracted my attention and I found that the patient had for two years been under treatment for gastric ulcer.

"I immediately administered half an ounce of chlorobrom which was retained, and in twenty minutes secured a sound sleep, which lasted for eight hours.

"At frequent intervals fluid nourishment was subsequently given, with finely chopped ice and small doses of chlorobrom. There was no return of nausea or retching. After two days she was able to be moved on deck, and she continued to improve in her general health until the end of the voyage."

EFFICACY OF CHLOROBROM IN SHORT VOYAGES.

I have also here, reports as to its efficiency in short voyages of ten to twelve hours duration, when these voyages were made by the night service of steamers. In such cases the following directions to secure its prophylactic effect must be rigorously observed by the passenger.

1. Unload the primæ viæ by taking for two successive nights, previous to going on board, an antibilious pill or a tamarindien lozenge.

2. When on board take no food but at once seek the sleeping berth, undress and take, in the case of a male, a tablespoonful and a half, and in the case of a female a tablespoonful of the solution. There follows a sound sleep from which the passenger awakes refreshed when the steamer is in sight of land.

The effects of this treatment are illustrated by the following details from two medical friends—the voyage of one being from Leith to Hamburg, and the voyage of the other from Glasgow to Shetland:

"Before crossing from Leith to Hamburg, I thought I would stave off my inveterate enemy—sea sickness—by following your advice and taking with me chlorobrom. I took for two nights previous to going on board a podophyllin pill, and when I embarked on board the steamer at 8 P.M., I went straight to my berth, and took a full dose of chlorobrom—one ounce. I slept soundly. I rose the next morning with a good appetite and never missed a meal although the steamer pitched a good deal. I may mention that I have crossed twice to New York, and three times to Hamburg, and without exception have been badly sick each time. I also gave some of the solution to a fellow-passenger and he writes, 'Having taken upon your recommendation two doses, I am able to declare that, although usually unwell under similar conditions, I have escaped sea sickness, have enjoyed my food and have slept as soundly as in my own bed.'

"The supply of the solution was limited, and the bottle was empty when I returned from Hamburg three weeks afterwards. The sea was no rougher than on the previous trip yet I was very sick. I could eat nothing. I vomited a great deal of bilious matter and afterwards had severe retching.

"Having suffered severely in my passage from Glasgow to Shetland I was glad to make a trial of chlorobrom this year. Two nights before embarking I took a pill of podophyllin and mercury, and then on board 6 drachms of the solution. The tossing was sufficient to wake me several times, but on such occasions I experienced for a few minutes an exquisitely pleasurable sensation of repose, which the rocking of the steamer seemed rather to enhance and then fell asleep again. A lady who made use of chlorobrom on the same voyage, stated to me, that she positively enjoyed the rolling of the steamer. As we entered the Firth of Forth I rose, and enjoyed a substantial breakfast. On my return journey I tried the solution with equally satisfactory results."

EFFICACY OF CHLOROBROM IN CASES OF HEMORRHAGIC PHTHISIS AND IN CASES OF UNCONTROLLABLE SEA SICKNESS.

All authorities agree in stating that a tendency to hemorrhage or unconquerable sea sickness are conditions which counter-indicate a sea voyage, and in a paper read at the medico-climatological meeting in Denver, I also referred to these as serious obstacles.

But now I consider these obstacles can be overcome by prudent advice and judicious treatment. As bearing upon hemorrhage the following case is worthy of note:

A young gentleman consulted me January, 1892. There was slight dullness at the apex of the left lung, and on three occasions he had suffered from severe hemoptysis. Circumstances prevented his going to any health resort at a high altitude, but he stated he would be able to take a sea voyage of considerable length. Now before knowing how sea sickness could be done away with, I would have hesitated to recommend this, owing to the risk accruing from its occurrence, but with the experience since gained I had no difficulty in telling him his plan would be advantageous. He was told what to do and by strictly obeying the injunctions laid down, he was able to pass through the Bay of Biscay perfectly free from *mal de mer*.

*Unconquerable Sea Sickness*—In the autumn of last year I was consulted by a gentleman whose dread of the sea, gained by an experience of two voyages to New York, was very great. He was obliged again to cross the Atlantic, and told me he would rather face a certain personage than endure the sufferings he had encountered, for in his two previous voyages he had never been able to leave his cabin. I assured him that he might undertake the passage with perfect confidence, provided he obeyed the injunctions I laid down. On his return to Britain he sent me the following communication:

"Previous to embarking I took two anti-bilious pills and in the evening before leaving Moville I took 6 drachms of chlorobrom. I slept quite soundly and rose the next morning with a good appetite and with no headache. On the second night I repeated the dose and although the weather was extremely severe I suffered in no way, but enjoyed the voyage immensely. I had an opportunity in our passage out, of giving some to a lady passenger who was afflicted with headache, nausea and sleeplessness. This

secured her a refreshing sleep, and the headache and nausea disappeared.

"I used the solution on my return voyage with the same good effects. The solution is very palatable and easily taken."

## THE SURGERY OF THE URETERS: A CLINICAL, LITERARY AND EXPERIMENTAL RESEARCH.

Read in the Section on Surgery and Anatomy at the Forty-fourth Annual Meeting of the American Medical Association June 8, 1893.

BY WELLER VAN HOOK, A.B., M.D.

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(*Concluded from page 916*).

*The Writer's Plastic Methods for Making a Vesical Diverticulum.*—When the ureter has been injured in intra-abdominal operations in such a way that the duct can not be there implanted into the bladder, or when morbid processes are found to have brought about the same result, I would recommend strongly the following procedure:

1. Implant the ureter upon the skin of the abdomen in the median line as near the bladder as possible. Close the abdominal walls as usual, except for the presence of the ureter.

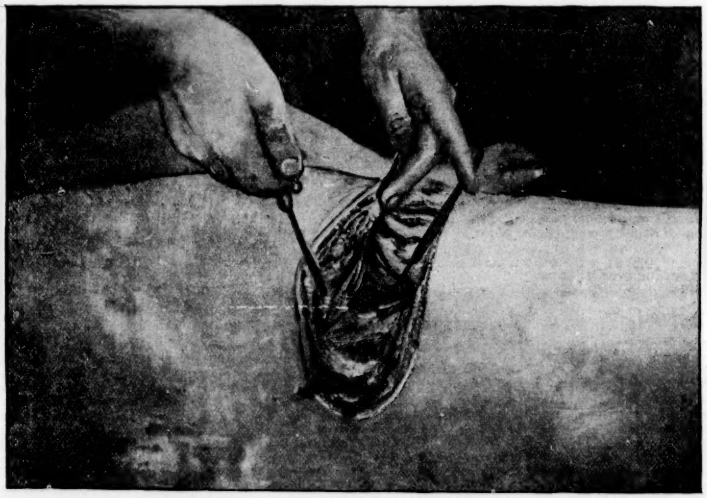

Fig. 3.—Cadaver lying on the left side. Incision made to expose the ureter, which is seen upon the hook at the right.

2. When the patient has fully recovered from the primary operation, open the structures composing the abdominal wall between the ureter and the pubes down to the peritoneum and bladder. The peritoneum must not be opened. The bladder may be distended and raised exactly as in supra-pubic cystotomy.

3. Make two incisions in the bladder parallel to the median line, beginning as near as possible to the peritoneum without prejudice to its integrity, carry them down at a distance of about 15 mm. apart towards the neck of the bladder under guidance of the finger. With scissors curved on the flat the two incisions are now united at the lowest point and hemorrhage is controlled with pressure forceps. It will be seen that we now have at our disposal a vesical flap of considerable extent hinged above by a nutrient pedicle.

4. The ureter is loosened from the skin and brought well down towards the flap which is simultaneously raised to meet it. The vesical flap is firmly fastened back in its new position by catgut sutures passing through the neighboring muscles or fascia, and the end of the ureter is held in position by light catgut sutures which pass through loose perireteral connective tissue, if possible, and through the muscular structures near at hand.

5. We are now in position to sew together the edges of the flap to form a tube, into the upper end of which the ureter is introduced, and to carry a similar row of light catgut sutures down the bladder wound itself. The lower angle of the vesical opening would best be left open for the sake of drainage. It will in all probability cause no trouble in healing. The upper part of the skin wound together with the fasciæ may be closed. Under careful antiseptic treatment this procedure ought to be as practicable and as easy as the majority of operations daily undertaken.

I have practiced the method only upon the cadaver. Fig. 8 shows the appearance of the parts after the flap is dissected up from the bladder. In this subject, a female of medium height, the distance from the pubes to the umbilicus was 17 cm.; from the pubes to the peritoneal reflection upon the bladder, 5 cm.; from the pubes to the upper end of the vesical flap, 10 cm. *Hence we may safely say that without opening the peritoneum the bladder can be plastically extended to meet the ureter, when that duct is brought out upon the abdomen at any point more than 8 cm., (about three and one-fourth inches) inferior to the umbilicus.*

This is not, however, the limit of such plastic procedures upon the bladder. For, if the peritoneum is opened, the flap can be considerably increased in size. The ureteral fistula having been established as before, as low down as possible the secondary operation is begun by (1) making an incision to expose the attachment of the peritoneum to bladder; (2) the peritoneum will then be opened transversely at or very near its vesical reflection, and fastened by some points of catgut suture (or by a continuous suture) to the fundus of the bladder as far back as possible. In other words, the peritoneum is transplanted backward upon the bladder. The point to which the peritoneum is transplanted must be marked by a silk suture, with ends left long if the operation is not completed at once. The remainder of the procedure may be performed at once if the urine is aseptic, and if the peritoneum has been well fastened down to the base of the bladder. If these conditions are absent, the final steps may be deferred some days. The remainder of the operation is the same as that already described except that the peritoneum being farther back, a much larger flap can be secured. Experiment upon the cadaver convinced me that with care the *bladder flap may, by opening the peritoneum, be made to meet*

*the ureter at any point one inch (2.5 cm.) or more below the umbilicus.*

This operation has the following advantages:

1. The normal relations of kidney and bladder are restored.
2. It is entirely safe, the technique annulling the dangers of peritonitis from the urine, if septic.
3. The bladder can be utilized by plastic procedure to make good a defect of several inches in the ureter.
4. No other viscus than those at first implicated is called upon to make good the loss.

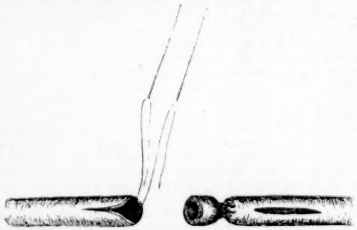

Fig. 4.—The suture armed with two needles holding the upper end of the ureter in its loop.

*Symphyseotomy* for exposure of the bladder to operation naturally suggests itself, since the attention of surgeons has been called to this method of reaching pelvic organs and of increasing intra-pelvic space. It has been formally proposed as a method of gaining access to the bladder by Wickhoff.[76] The bladder distended with six to twelve ounces of water, may be brought into view and be made easily accessible when the symphysis is divided. The harmlessness of the procedure when carefully performed would render it justifiable as a preliminary step in the writer's methods of making a vesical diverticulum to meet a shortened ureter.

*Rydygier's Method.*—An ingenious method of extra-peritoneal ureteroplasty was suggested by Ludwig Rydygier.[57] He advises that in cases of injury to the ureter during surgical operations, the two ends of the ureter be brought out through the abdominal wall and the wall be allowed to close about them. He would then prepare for the urine an artificial channel of skin by making two parallel incisions between the two openings, suturing together the edges of the isolated piece of skin so as to form a tube and depressing this tube by sewing over it the severed edges of skin drawn from each side.

Fig. 5.—The needles passed down the ureter through the slit and emerging from the ureteral wall.

The theoretical possibility of success by this method can not be doubted. For just as Rosenberg,[58] has shown that intestinal mucous membrane is speedily replaced by bladder epithelium when the bowel is implanted into the bladder, so Bardenheuer[5] has shown that even very large masses of skin when transplanted into the oral cavity can speedily do full duty as mucous membrane by becoming overgrown with the epithelial cells peculiar to the oral mucous membranes. We would expect that in a comparatively short time after the turning in of the skin, according to the suggestion of Rydygier, the epithelium of the new tube would gain the essential characters of the ureteral mucous membrane. The plausibility of the plan is much diminished, however, when we remember how difficult it would be to overcome the influence of the urinary pressure at the points of desired junction. The method might be successful, however, by affording abundance of drainage at first, until healing had occurred at all points except those of junction.

In a case of this description (i. e., where the two ends of an injured ureter were implanted into the abdominal wall at some distance from one another) the writer suggested the formation of a new channel by implanting into a gutter between the two openings, a labium majus from the same patient. It was suggested that if this large piece of double mucous membrane were split after being removed it might be implanted by the Thiersch method and made to serve as mucosa for a new ureter. I am not aware that the suggestion was acted upon.

*Vaginal Plastic Methods.*—The ureter not infrequently opens congenitally upon the vulva or within the vagina. These cases are usually amenable to treatment by making an incision around the orifice of the duct, at a distance from the ureter sufficiently great to leave a piece of mucous membrane attached to the tube. The ureter is then dissected back to the extent necessary to enable the operator to readily insert it into the bladder through an incision made for the purpose. Such a case is that of McArthur[35] which was entirely cured by this method.

The paper of Secheyron[59] upon the abnormal openings of the ureter upon the vulva and in the vagina should be mentioned in this connection.

Vaginal plastic methods, applicable when the ureter has been injured in surgical operations especially the modern kolpo-hysterectomy, have been frequently devised and put in practice. When the ureter discharges its fluid into the vagina and the duct itself can not be implanted directly into the bladder, two general plans are at our disposal:

1. The vaginal wall may be utilized to make a new channel to the bladder.
2. The vagina may be closed (kolpokleisis) particularly when the uterus has been extirpated.

The first of these plans has been repeatedly utilized and has given satisfactory results. The procedure was projected by T. A. Emmet,[15] in a case in which the mouth of the ureter opened "on a line with the os uteri." Dr. Emmet formed a channel out of vaginal tissue to carry the urine from the mouth of the ureter to a point well beneath the bladder, intending to turn the new opening of urinary discharge into the bladder by a temporary vesico-vaginal fistula. The first part of the plan, the making of a new duct, was carried out without difficulty but the patient died of pneumonia in the interval between this and the final procedure.

Fig. 6.—The ends of the suture having been used to invaginate the upper in the lower fragment, are tied together.

Of course the lengthening of the ureter is unnecessary when it discharges into the vagina at a point well under the bladder. In this condition a vesico-vaginal fistula is made, and the ureteral opening is turned into the bladder. This was successfully accomplished by Dr. Wm. H. Baker of Boston, at the suggestion of Emmet, in a case in which the ureter opened congenitally into the vagina at a point near the urethral meatus.

The most interesting communication yet written upon the subject of vaginal ureteral fistulæ comes from Arie Geyl[21] whose work appeared in 1892. He describes minutely a case in which, after a difficult forceps delivery a woman was found to have a fistula of both ureters, on one side emptying into the vagina near the uterus; on the other side discharging into the uterus at some unknown point. To get rid of the discharge from the uretero-vaginal fistula, Geyl used a portion of the vagina to form a pouch which he caused to communicate with the bladder by means of a permanent fistula. This was readily accomplished by first making a large opening into the bladder from the vagina and then removing an oval strip of vaginal mucous membrane surrounding this opening and the end of the ureter. By approximating the denuded surfaces from side to side the uretero-vaginal fistulæ were made to communicate. This operation was a success. The subsequent attempt to close the uretero-uterine fistula failed and the patient declined further interference. The uretero-vaginal fistula was thus closed by a procedure easier and safer of execution and far more desirable than nephrectomy. Baum[4] describes an ingenious procedure by which he succeeded in closing a supernumerary ureter opening into the vagina. He opened the bladder supra-pubically; then after incising the base of the bladder freely, he closed the peripheral end of the sacculated ureter thoroughly and stitched the edges of the ureteral dilatation to the edges of the wound in the base of the bladder. In other words, he used the sectio alta in order to turn the supernumerary ureter into that viscus.

Very interesting recent cases of uretero-vaginal fistulæ have been studied by Weil.[73] Other cases have since been observed and operated upon, but it is not the purpose of this paper to make more than an allusion to this possibility, which readily does away with one of the commonest excuses for removing the kidney.

A ready conclusion from these considerations is to be found in the recommendation which I would unhesitatingly

and urgently make to those performing vaginal hysterectomy. When a ureter is injured during the course of the operation and the condition is realized, the ureter should be drawn down into the vagina and fastened to the vaginal wall well under the base of the bladder so that a subsequent plastic procedure may cause it to discharge normally. It should be covered by mucous membrane.

The second method of getting rid of uretero-vaginal fistulæ, by closing the vagina permanently and establishing a vesico-vaginal communication, has been applied in several cases. It is not objectionable after kolpo-hysterectomy except in those cases in which marital relations would be interfered with by vaginal closure.

These two methods are so easily practicable and so nearly devoid of danger in their application that they should wholly supplant the destructive operation of nephrectomy for the relief of this form of ureteral fistula.

*Urine Discharged Extra-Vesically.*—It is within the experience of almost every surgeon to have seen cases of ureteral fistulæ discharging upon the skin. It is also easily understood that such fistulæ may readily be produced at will, when the ureter has been severed, by simply splitting the ureter slightly to enlarge its external opening and suturing it carefully upon the skin. Obviously, care must be taken that the ureter is not too sharply bent upon itself at any point in bringing it out of its natural bed, and that it is not compressed by other tissues or organs. It is not necessary to mention the many disastrous consequences which might arise as a result of compression in this way. The ureter has been purposely brought out upon the abdominal wall in this way, as in the cases of LeDentu[52] and Pozzi.[48] Trekaki[68] goes so far as to recommend this operation in tumors of the bladder which compress the lumen of the ureter, in compression of the ureter by inoperable carcinomas and myomas of the ureters or inoperable tumors lying higher in the abdominal cavity. He regards partial lesions of the kidneys and not too extensive inflammations of these glands as by no means contra-indications for the procedure, but rather as indications, since they are more likely to recover when the urinary pressure is removed. He adds also that in complete ruptures of the ureters, after a trauma or surgical operation, suture of the ureter into the wound is indicated instead of nephrectomy. Trekaki supports his opinions by citing two experiments which he has made upon dogs. In one of these he sutured both ureters into the lateral abdominal walls. On the right side the abdominal wall suppurated and a pyelonephritis arose; on the left, more than five weeks after the operation the kidney was found healthy. In the second case, the same experiment being tried, the dog showed itself after several weeks to be perfectly well, with normal urine. From the first of these experiments we must conclude that bacterial activity about the mouth of the ureter is fraught with the gravest danger—a fact to which we shall frequently have to revert. The second experiment is a demonstration that even in the case of the dog the ureters may discharge upon the skin for a time without a resulting pyelonephritis.

*Implantation of the Ureters into the Small Intestine* has been practiced experimentally by a number of persons, in recent years. But I am not aware that any one now seriously recommends the procedure in practical surgery. The disadvantages of the small intestine as a receptacle for the urine are so much greater than those of the rectum that they must be obvious to all. Of these the most important are the facts that the urine discharged into the small intestine would have to traverse, before extrusion, a much greater extent of intestine than would be the case with implantation into the rectum; and that the structure of the small intestine is still more complicated than that of the rectum.

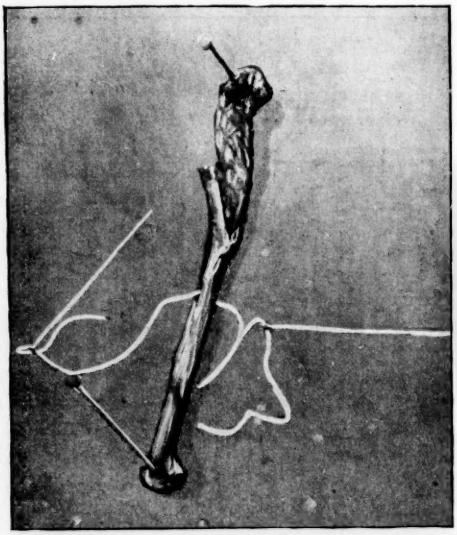

Fig. 7.—Writer's method of lateral implantation of the ureter, illustrated upon a piece of human ureter. The upper portion is being drawn into the lower by the two threads.

I have made two experiments upon dogs to establish the value of the procedure. In both cases a single ureter was implanted into the bowel, about eighteen inches above the ileo-cecal valve. In both instances no serious inconvenience to the animal was observed. But upon killing the animals about ten days after the operation, the kidneys corresponding to the implanted ureters were found swollen and showed all the signs of pyelonephritis. The patency of the opening into the bowel was in both instances slightly compromised, so that there was a collection of a couple of drachms of purulent urine in the pelvis of the kidney and the ureter. As the result of these experiments does not differ from that of some of the implantations into the rectum, I would regard the upper portion of the intestine as less suitable than the rectum, solely on account of the a priori reasons already advanced.

*Implantation of the Ureters into the Rectum* was suggested by Roux and put in practice by John Simon in a case of exstrophy of the bladder, with an unfavorable result. Chaput

has, according to Rosenberg, recently practiced the method successfully in two cases. Morestin, according to the same writer, successfully practiced the operation in experiments upon the lower animals. Whether one or both ureters were implanted in the rectum is not stated.

Novaro,[57] an Italian, published in 1887 an elaborate account of an experiment upon a dog in which both ureters were implanted in the rectum. The dog recovered from the operation and was killed about thirty days afterward. The ureters were found neatly healed into the rectum and a microscopic examination of the kidneys was made. The testimony of the pathologist who made the examination is not absolutely unequivocal as to inflammatory changes, and no bacteriologic examination of the mucous membrane of the pelves of the kidneys and the mucous membrane of the ureters was recorded.

Tuffier[60] describes his own experiments in this direction, and reached such unsuccessful results that he advised against the procedure.

Gluck and Zeller[77] experimented upon this subject without success, and emphasize the importance of stricture formation with hydronephrosis.

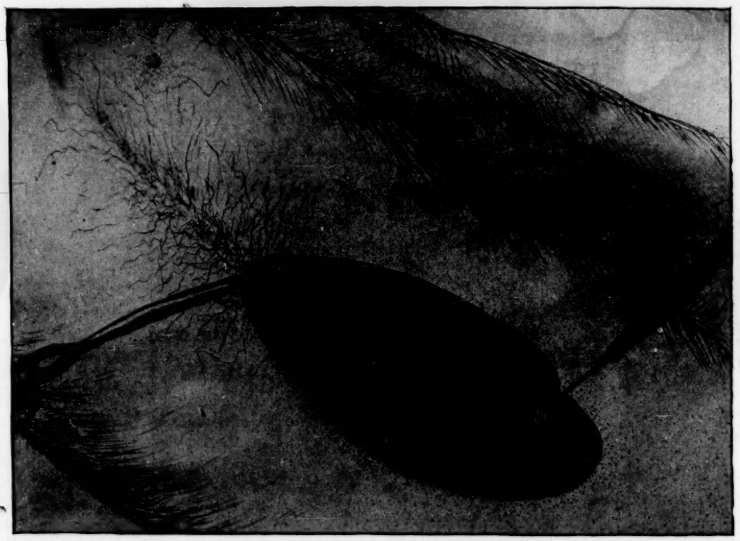

Fig. 8.—Writer's method of making a vesical flap to meet the ureter when the peritoneum is opened. The flap reaches to within an inch of the umbilicus, which is not shown in the drawing.

Bardenheuer[5] studied the same questions with more encouraging results. Unfortunately his original work is not accessible to me.

In our own country, Dr. Harvey Reed[52] of Mansfield, Ohio, presented before the AMERICAN MEDICAL ASSOCIATION in 1892, a paper recording twelve experiments upon this subject. Dr. Reed recommends the implantation of a single ureter in the rectum, but thinks we are not justified in attempting the operation upon both ureters at once.

The arguments in favor of the feasibility of implantation of the ureters in the rectum begins with the fallacious a priori reference to the urinary apparatus of birds. The argument is: (major premiss) birds urinate through the rectum (the usual loose statement); (minor premiss) man is a featherless biped; (conclusion) man should or may upon occasion urinate through the rectum.

But, neglecting the absurdity of the conclusion, the argument of analogy may be substantially controverted by these propositions:

1. The urine of birds is very slightly moistened. It therefore does not so easily undergo decomposition, and more important still, it can not mechanically carry bacteria to the kidneys, as is the case with fluids.

2. An amply sufficient argument in itself against a comparison of the species lies in the fact that birds' ureters are supplied with a mucous membrane evolutionally accustomed, as it were, to contact with infected solids and fluids; while the ureters of man are normally accustomed to the most absolute and perfect protection from the action of injurious microbic influences. This inherited ability of specialized tissues to resist invasion by micro-parasites is termed "resisting power," and is known to vary with the situation and needs of the different tissues. The ducts of all the secreting glands are more or less capable of repelling these invaders, as for example those of the liver and pancreas which normally open into the bacterially filthy bowel; the ducts of the salivary glands similarly open into an exceedingly "septic" cavity; the Bartholinian glands open upon the septic vulva. These various ducts rarely carry back to the glands which they supply the materials for their inflammatory destruction. It is true that some of them are protected by a slightly or relatively perfect valve action of the mucous membrane at their outlets, but their main strength in opposing microbes must lie in their resisting power, acquired by evolutional cycles of association with their enemies. The ureters, however, are among the most perfectly protected structures in the whole human anatomy. It is true that they stand in mechanical communication with the external filth. But the commerce of fluid is all in one direction—*nulla vestigia retrorsum!* Two powerful sets of gates close after the departing urine—first, the valve-like folds of the cystic mucous membrane at the mouths of the ureters; second, the sphincter vesicæ at the exit of the bladder. Each of these barriers is effective for a long time in repelling invaders. A violent urethritis often occurs without a cystitis. A violent cystitis often occurs without a urethritis. These well-protected ducts, the ureters, are therefore guarded so carefully that they need only in pathologic circumstances to meet microörganisms, and are therefore weak and well-nigh impotent to resist such enemies. How absurd and unthinking it is, then, to thrust the ends of these delicate tubes into the filthy rectum or small

intestine, filled with not only solid but liquid and gaseous materials to distend and defile the ureters and pelves of the kidneys.

The statement made by Dr. Reed that, in recto-vesical fistula, "the rectum usually becomes reconciled to the presence of the urine, and were it not for the escape of the feces into the bladder and the production of acute cystitis, there would be little to fear from this malady except some possible inconvenience," shows a pathetic regard for the powerful rectum, but no thought or consideration for the defenseless ureters. In vesico-rectal fistulæ the feces might lie in contact for some time with the bladder wall without setting up inflammation of the ureters. But we all know from daily experience that the great danger in all cases of septic cystitis lies in possible uretero-pyelo-nephritis. In chronic cystitis this extension of inflammation does not always produce an immediately fatal result. The process may be slow and the patient may die months or years after the inception of the cystitis, from some acute exacerbation of the nephritis.

The arguments in favor of rectal implantation of the ureters from analogy and from pathology are therefore wholly fallacious.

Experimental evidence upon this subject has been, (1) negative, as in the work of Tuffier, one of the most reliable and accurate experimental surgeons; (2) incomplete, as in the case of Bardenheuer, Morestin and Novaro; or (3) incomplete and imperfectly observed, as in the report of Dr. Reed already cited.

The first of these classes requires no discussion. The evidence of these surgeons is clearly against implantation of the ureter in the rectum.

By "incomplete evidence," I mean that while the results of these experimenters were favorable, their published trials of the procedure were too few in number to convince us that their successes were more than exceptional. We have no reason to believe that they could repeat the effort at will without disaster. Moreover, the observation of the strongest case yet recorded, that of Novaro, in which both ureters of a dog were implanted in the rectum and healing was found perfect after thirty days, is imperfect in that no bacteriologic examination of the pelves of the kidneys was made.

Dr. Reed reaches the strange conclusion, "that the unilateral implantation of the ureter in the rectum is a possible and practicable surgical procedure." He bases this conclusion upon a priori reasoning which I have already refuted, and upon three experiments upon dogs:

(1). Unilateral implantation—dog recovered from the operation and was killed eight or ten weeks later; specimen "rendered useless by wanton mutilation."

(2). Dog killed twenty-four days after operation; kidney "congested and shows evidence of acute nephritis," attributed to hydronephrosis caused by external adhesions.

(3). Dog killed twenty-five days after operation; no renal congestion, no hydronephrosis; patent opening into rectum.

The first of these experiments is not to be considered, as an examination of the specimen was not reported. The second is clearly demonstrative of the dangers of the procedure. The specimens of the third case, which is the most favorable, were not examined bacteriologically or even microscopically. Without these examinations we can not form an accurate judgment. Finer changes may contradict gross appearances, and the presence of bacteria, even if the kidney were normal, would obviously be a most serious menace to the future integrity and activity of the organ.

In six bilateral implantations, Dr. Reed reports three deaths from acute general peritonitis; one death from acute nephritis; one death from abscess of the abdominal wall; and one death from peritonitis and nephritis. In one-third of these cases, nephritis was confessedly present. No bacteriologic or microscopic examination of the pelves and kidneys of the other cases was made.

From this consideration of Dr. Reed's experiments we must conclude that, so far as the feasibility of rectal implantation of the ureter is concerned, his researches are in part directly contradictory evidence, and in part entirely incomplete.

Fig. 9.—Writer's method of turning upward a vesical flap to meet the ureter. Although the peritoneum is unopened, the flap reaches a point within three inches of the umbilicus, seen at the upper edge of the cut.

Tuffier's[69] experiments gave evidence contradictory to the possibility of utilizing the bowel as a receptacle for urine.

It seems to me that the feasibility of this operation rests upon a satisfactory answer to the following inquiries:

1. Does our mechanical technique assure us of reasonable safety in opening the septic rectum and fastening into it the ureter?

2. Does the rectum tolerate the urine and satisfactorily extrude it?

3. Do the ureter and the corresponding kidney tolerate the new anatomic arrangement?

4. Does our technique insure us against stenosis of the duct at the point of junction with the rectum?

The first of these questions can be answered with a hesitating affirmative. The trials of the procedure which have thus far been made upon human subjects have not all been published; of this I am assured by personal communications to which I am not at liberty to make specific reference. These unpublished failures are doubtless due to peritonitis

from infection through the rectal opening. Dr. Reed's technique is in the main good. There is no need of especial care in excluding the aseptic urine from the peritoneal cavity; it is in no such degree "irritating," as is the case with sublimate and other antiseptic solutions. The main immediate danger lies in the escape of fecal matter from the bowel. It is evidently proper, as Dr. Reed has done, to take up with the ureter a fold of peritoneum which is carried into the rectum. Dr. Reed passes a loop of thread over the end of the ureter, and by means of a needle threaded upon the loop carries the thread down the rectum a short distance and out through the rectal walls. Traction upon the thread draws the ureter well into the bowel, and after sutures are passed through the loose tissue about the ureter, the loop is released by cutting short the thread and allowing it to retract into the bowel.

Novaro's technique is very minutely described. It involves a V-shaped incision into the bowel, and seems to me unnecessarily complicated.

The method I have employed experimentally is as follows:

Raise an ample fold of peritoneum with the ureter. After severing the ureter, ligate the cystic end of the duct, and then split the opening of the renal portion of the tube with fine scissors upward for a distance equal to three times its diameter. Cause two small needles armed with a single fine silk or catgut thread to pass from within outward through the split end of the ureter. The ureter is thus grasped in the loop. Now pass the two needles into the bowel through a small longitudinal slit on the free border and carry them downward about one-half inch. When they are now pushed out through the rectal walls, the ends of the thread may be lightly tied together, drawing the ureter into position and permanently maintaining it there. The operation is completed by covering in the knot with two or more Lembert sutures, closing the rectal wound as well as possible without compressing the ureter, and applying a peritoneal graft. I made eight experiments by implanting a single ureter into the rectum after this manner. Three of these dogs died of general peritonitis. I have no hesitation in saying, however, that further practice would diminish this death rate. Still, it is apparent that the primary mortality from peritonitis must be high, since we are not at liberty to apply sutures tightly about the opening in the bowel, but must depend partly upon rapid peritoneal proliferation to close the wound. But even if closure could be perfectly secured at once, the escape of septic matter which almost inevitably occurs when the bowel is opened exposes the peritoneum to great risk of infection.

The second of these queries, as to the toleration of the urine by the rectum, can be quickly disposed of. Experience has amply proved that the rectum can easily maintain its integrity in the presence of the urine. And indeed, no one seems to have seriously raised the question except to answer it in the affirmative.

But the third question—involving the tolerance of the ureter and kidney for the new anatomic conditions—has not attracted the attention which it deserves, although infection has long been known to travel up the ureters with facility, as shown, for example, by Poirier.[45] For in reality this is the most important of all the questions. It is not to be expected that the rectum will refuse to submit to contact with the urine; but that the ureter, with its delicate mucous membrane leading to the easily inflamed pelvis, calyces and tubules of the kidney, should be expected to withstand the effect of being suddenly implanted into a reeking culture ground of the most various bacteria, is more than I can comprehend.

The experiments of previous investigators have not been directed to a solution of this question. From Dr. Reed's paper we gather that in two out of six unilateral implantations there were marked gross evidences of nephritis. It is probable that the number would have been much greater if the animals had been allowed to live longer.

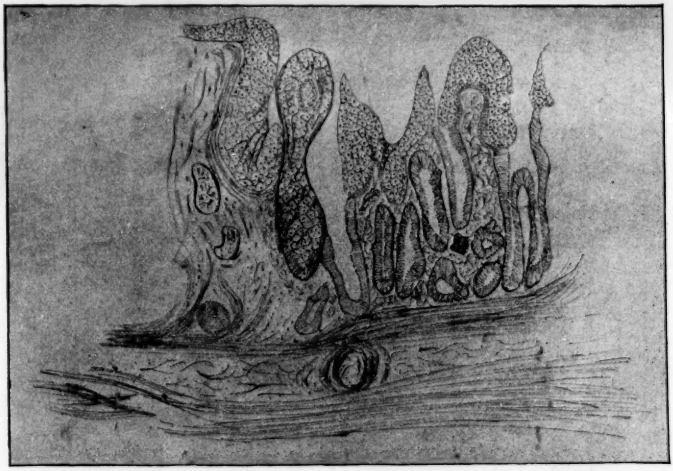

Fig. 10.—A section from the junction of a knuckle of small intestine and the bladder wall. On the right the cylindrical cells of the implanted bowel; on the left the flat epithelial cells of the bladder displacing the cylindrical cells. Rosenberg, Virchow's Arch., Band 131.

Of eight dogs in which I implanted one ureter in the rectum three died. In each of these three cases the kidney belonging to the implanted ureter was violently inflamed, being swollen, turgid and heavy, with muco-pus upon the mucous membrane of the pelvis. The following is a detailed account of one of the cases:

April 26.—Dog of thirty pounds weight; curly female. Following the technique already described the right ureter was implanted in the rectum. A small amount of fluid fecal matter escaped from the rectal wound, but was wiped away as carefully as possible. The operation was completed by a careful toilet of the peritoneum and closure of the abdomen. Forty eight hours later the dog was found in a dying condition and was killed. A careful examination of the abdominal cavity showed a moderate amount of peritonitis about the site of implantation. There was no leakage from the bowel. The left kidney and ureter were normal in all particulars. The right ureter and kidney were in a state of violent inflammation. They were swollen and intensely red. In the pelvis of the kidney, which was opened with a red-hot knife, were a few drops of muco-purulent fluid with a tinge of blood in it. Cultures were made under all the indicated precautions. The patency of the ureteral canal was demonstrated by passing a small probe into the bowel.

Microscopic examination shows violent hemorrhagic inflammation of the pelvis and pyramids of the kidney, as shown in the micro-photograph. Cultures of staphylococcus pyogenes aureus and other bacteria grew in the gelatin tubes inoculated, in a few days.

The five remaining dogs recovered from the immediate effects of the operation and were killed between the four-

teenth and twenty-first days after the operation. In three of these dogs the kidneys corresponding to the implanted ureters were in a state of morbid suppurative inflammation, pus being found in the pelves of the kidneys. The patency of the opening into the rectum was not so perfect in three cases as in those already described, as it required a small probe to pass into the rectum.

(Dr. Reed mentions in one case, (Exp. 11) of the implantation of both ureters that the right ureter was somewhat obstructed, the left freely open; nevertheless, there was violent inflammation of both kidneys.)

Implantation of both ureters in the rectum simultaneously, is an unmistakable test of the tolerance of the ureters and kidneys, provided the subject escape death by peritonitis. I performed six operations for the implantation of both ureters in the rectum. All the dogs died within six days. Four deaths were due to general peritonitis alone; the two other deaths were due to nephritis without complicating general peritonitis. In one of those dying of peritonitis and nephritis, there was moderate obstruction of the ureter causing retention of the urine in the pelves of the kidneys. The same thing occurred in one of those dying of nephritis. In none of these cases were the kidneys in such a condition that they could be expected to regain the performance of their functions in the face of so much infection.

It will thus be seen that in no single permanent introduction of the ureter into the rectum has it been demonstrated that inflammatory reaction on the part of the kidneys was absent. On the contrary, in a large majority of the implantations indications of pyelonephritis were glaringly evident even upon gross examination. My conclusion is, therefore, that the ureters and kidneys are absolutely intolerant of this interference.

The answer to the last question can not be gained from the experiments thus far recorded, inasmuch as the dogs were killed too early to admit of scar contraction taking place at the point of implantation. But when we remember that the lumen of the ureter is exceedingly small; that this lumen is diminished rather than enlarged by the act of securing it in the rectum; that scar contraction must inevitably occur at the circle of cicatrization at the opening into the rectum; and above all that during the first few days of wound healing, as well as later, the constant tendency of the muscular fibers of the rectum is to lessen the circumference of the communicating opening between the ureter and rectum, we can not feel any confidence whatever in the permanent patency of the opening after the lapse of months and years. No implantation of a single ureter into the rectum either experimentally or in the human subject, should be accepted as favorable evidence, unless an autopsy has been made a long time after the operation.

Of all these arguments the readiest and most conclusive is that the infection of the upper urinary passages is inevitable. This is proved by the observation which I have recorded, showing that in one instance violent infection of the ureter and pelvis of the kidney occurred, with hemorrhagic purulent inflammation and the presence of abundant bacteria in the bloody pus at the end of forty-eight hours.

From this study of the possibility and practicability of implantation of the ureters in the rectum, the conclusion is inevitable that intestinal or rectal implantation of the ureter is primarily and remotely an extremely dangerous procedure unjustified by reason and condemned by experiment, and second that, inasmuch as the vital objections to this expedient are fundamental and not dependent upon criticism of a faulty technique, this operation must be regarded hereafter as unjustifiable in practice upon the human subject.

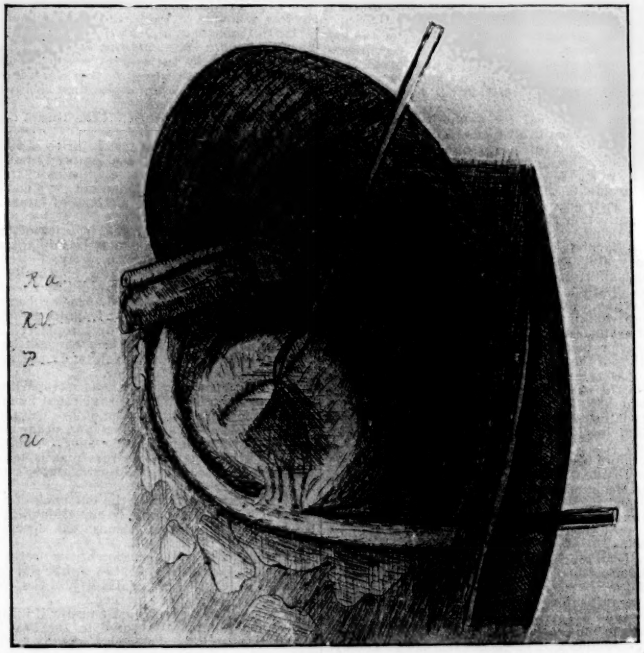


Fig. 11.—Implantation of the ureter upon the skin of the back. Le Dentu.

*Stopping the Secretion of Urine* may be accomplished by ligating the ureter, or by the obvious alternative of removing the kidney.

The immediate and remote consequences of complete ureteral obstruction have been the object of study by a number of physiologists as well as pathologists. Arnold Holste[5] has given some study to this subject and finds that, after ligation, the pelvis of the kidney is first dilated, then the tubuli recti and finally the remaining tubules are distended.

When obstruction is complete, secretion stops as soon as extravascular urinary pressure equals intravascular blood pressure. The kidney, as a whole, becomes larger in all cases of obstruction, and especially is this the case when the stoppage is effected gradually or when it is intermittent, as is the case with compression of the ureters in carcinoma uteri or in intermittent hydronephrosis from calculi of the bladder or pelvis. Orth[40] formulates the rule that the more slowly the total obstruction is reached the greater will be the sacculation.

The facts that secretion stops entirely when the ureter is ligated, that sacculation is slight when there is absolutely no leakage, and that atrophy of the parenchyma of the kidney occurs later on, have led some authors to recommend ligation of the ureter as an expedient to be adopted when it is incapable of performing its function and when lesions are irreparable. This recommendation has been made by one of the French writers.

The idea seems chimerical for a number of reasons. LeDentu[32] counsels against it for two reasons:

1. Because of antecedent infection (which is liable to convert a simple hydronephrosis into a pyonephrosis).

2. Because "grave accidents" are liable to occur.

These grave accidents which LeDentu does not specify are indeed sufficiently grave. One readily thinks of slipping of the ligature; infection of the ligature which would allow infected pent-up urine to escape into the retro-peritoneal space if not into the abdominal cavity itself; rupture of the distended kidney, etc. Again, the sudden stoppage of the ureter in experimental animals always produces an enormous venous congestion, especially of the veins upon the capsule of the organ. Rupture of these veins with dangerous hemorrhage would not be inconceivable in patients whose vascular systems are in an abnormal condition. An entirely different problem which the suggestion brings up, is as to the ability of the remaining kidney to bear the additional burden of secreting the urine which would have been discharged from the other kidney. This danger would be equal to that which we fear in primary nephrectomy.

To me the greatest objection to the method, except of possible infection, lies in the fact that the kidney is sacrificed as completely as if removed. The kidney is an organ which has heretofore been sacrificed for ureteral disease or injury far more frequently than it should have been—more frequently than the immediate future will justify.

*Nephrectomy for simple ureteral fistulæ* has been performed many times, usually with success. It is unnecessary to refer to the many reports with which periodical medical literature abounds.

Kidneys have been sacrificed also for many other equally simple conditions, as intermittent hydronephrosis, cicatricial stenosis of the ureter, etc. But it is well-known that the process of compensatory hypertrophy of the remaining kidney always adds gravity to nephrectomy and, as one kidney is liable to many forms of disease while its fellow remains intact, it follows that the possession of two kidneys is a great safeguard to the patient. These facts are amply sufficient to make it unjustifiable to sacrifice a kidney, except when every means has been resorted to in order to repair the morbid condition. Indeed, it is just as improper to remove a kidney for remediable ureteral disease as to remove a kidney because it is movable.

CONCLUSIONS.

1. The extra-pelvic portion of the ureter is most readily and safely accessible for exploration and surgical treatment by the retro-peritoneal route.

2. Hence all operations upon the ureters above the crossing of the iliac arteries should be performed retro-peritoneally, except in those cases in which the necessity for the ureteral operation arises during laparotomy.

3. The intra-pelvic portion may be reached by incision through the ventral wall, the bladder, the rectum, the vagina in the female, the perineum in the male, or by Kraske's sacral method.

4. The ureter is not only exceptionally well protected from injury, but by its elasticity and toughness resists violence to a remarkable degree.

5. The histology of the ureters furnishes most favorable conditions for the healing of wounds.

6. Longitudinal wounds of the ureter at any point, heal without difficulty in the absence of septic processes, under the influence of ample drainage.

7. In all injuries where the urine is septic before the operation, or where the wound is infected during the operation, drainage must be effected.

8. The chemic composition and reaction of the urine must be studied in all injuries to the ureter, the urine being rendered acid, if possible, and the specific gravity kept low.

9. The pelvis of the ureter is, *cæteris paribus*, the most favorable site for wounds of the ureter, since scar contraction is not so likely there to be productive of ill results.

10. In aseptic longitudinal wounds of the ureter occurring in the course of laparotomy, suture may be practiced and the peritoneum protected by suture.

11. Transverse wounds of the ureter involving less than one-third of the circumference of the duct, should be treated by free drainage (extra-peritoneal), and not by suture.

12. In transverse injuries in the continuity of the ureter, involving more than one-third of the circumference of the duct, stricture by subsequent scar contraction should be anticipated by converting the transverse into a longitudinal wound and introducing longitudinal sutures.

13. In complete transverse wounds of the ureter at the pelvis, sutures may be used if the line of union be made as great as possible.

14. In complete transverse injuries of the ureter in continuity, union must not be attempted by suture.

15. In complete transverse injuries of the ureter in continuity, union without subsequent scar contraction may be obtained by the writer's method of lateral implantation, as described.

16. In complete transverse injuries of the ureter very near the bladder, the duct may be implanted, but with less advantage, into the bladder directly.

17. At the pelvis of the ureter, continuity after complete transverse injury may be restored by Kuester's method of suture, providing the severed ends can be approximated by slightly loosening the ureter from its attachments.

18. Rydygier's method of ureteroplasty, in such injuries may be tried if other methods can not be utilized. The primary operation should at least fix the ends of the tube as nearly as possible together.

19. In both transperitoneal and retroperitoneal operations the ureteral ends can be approximated by my method even after the loss of about an inch of its substance.

20. The use of tubes of glass and other materials for the production of channels to do duty in place of destroyed ureteral substance must be rarely satisfactory, and even if temporarily successful, the duct is almost sure to be choked by scar contraction.

21. The implantation of the cut ends of a ureter into an isolated knuckle of bowel is objectionable; 1, because the bowel is not aseptic; 2, because the operation is too dangerous.

22. In injuries of the portion of the ureter within the pelvis, with loss of substance, the ureter should be treated as follows: if possible, the continuity of the ureter should be restored by the writer's method.

23. If this is not possible, the ureter if injured in vaginal operations should be sutured to the base of the bladder with a covering of mucous membrane as far forward as possible, with a view to a future implantation or formation of vesico-vaginal fistula with kolpokleisis.

24. In injuries to the pelvic ureter during laparotomy, where the continuity can not be restored, and where temporary vaginal implantation can not be effected in the female or vesical implantation in the male, the proximal extremity of the duct should be fastened to the skin at the nearest point to the bladder.

25. In ventral ureteral fistulæ opening near the bladder, the ureteral extremity may in some instances be planted directly into the bladder without opening the peritoneum.

26. In such cases where the ureter will not reach the bladder a flap may be raised from the anterior vesical wall and reflected upward, extra-peritoneally, to meet the ureter and form a tubular diverticulum.

27. Such a flap may be so elongated by a preliminary operation to transplant the peritoneum back of the fundus, or by accurately suturing it there at a single sitting, that median ventral fistulæ of the ureter may be cured if they open at any point an inch or more below the umbilicus.

28. Symphyseotomy is a valuable and justifiable preliminary step in these plastic vesical operations.

29. It is legitimate when both ends of a cut ureter open upon the abdominal wall to try Rydygier's method.

30. Implantation of one or both ureters into the rectum is absolutely unjustifiable under all circumstances because: (1) the primary risk is too great; (2) there is great liability to stenosis of the duct at the point of implantation; (3) suppurative uretero-pyelo-nephritis is almost absolutely certain to occur, either immediately or after the lapse of months or years.

31. Ligation of the ureter to cause atrophy of the kidney is unjustifiable.

32. Extirpation of a normal kidney for injury or disease of the ureter is absolutely unjustifiable, except where the ureter can not be restored in one or other of the ways cited.

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## AMPUTATION AT THE HIP-JOINT, BY WYETH'S BLOODLESS METHOD.

Read before the Southern Surgical and Gynecological Association, at New Orleans, La., Nov. 14, 1893.


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Dr. John A. Wyeth read a paper on a "Bloodless Method of Amputation at the Hip-joint,"[1] at the meeting of the AMERICAN MEDICAL ASSOCIATION in 1890. He had previously reported two cases successfully operated on by the method, to the Section of Surgery of the New York Academy of Medicine. He again described his method at the Pan American Medical Congress in Washington.

These cases were sarcomatous tumors of the thigh. In addition to these two successful cases, he gives also in detail in the paper referred to, two cases operated on successfully by McBurney and Fluhrer, the first being an infiltrating sarcoma of thigh, the second an osteo sarcoma.

As to bleeding in these four cases Wyeth reported that in his own two cases there was "*no bleeding at all;*" in Fluhrer's not more than four ounces of blood was lost during the whole operation, while in McBurney's perhaps "not an ounce in all." In Fluhrer's the operation lasted one hour and a half, in McBurney's case the time is not stated, but the operation is said to have been finished "with great rapidity."

Since these cases were published a number of surgeons have employed the method, and some valuable contributions have been made to the literature of amputation of the hip. I have been able to collect the following cases, which I shall give without any attempt to report them in chronological sequence:

*Case 5.*—Case of Dr. John B. Deaver.—The patient, female, age 20, fell down stairs in 1886 and sustained an injury of the hip. In August, 1888, an abscess formed and was opened. In October, 1889, the femoral head was excised for necrosis. In September, 1890, another abscess formed. There were sinuses and manifest enlargement of femur. There was evidently a mild septicemia in progress. Oct. 21, 1890, under ether, the limb being rendered bloodless by Esmarch's bandage, Wyeth's amputation was done. On November 30 the patient was entirely well.

*Case 6.*—Case of Dr. Nancrede.—T. M., age 31. Patient had suffered of strumous disease of left knee-joint, which had been treated by tapping, washing and iodoform injection. Two months later another surgeon performed a supra-condyloid amputation using diseased tissues for his flaps. Wound did not heal, lower half of thigh becoming

[1] Dr. Wyeth first employed the method successfully in an amputation at the shoulder joint. The hemorrhage was so well controlled that he was led to resort to the same expedient in hip amputation. Dr. J. H. Brinton has reported two cases (one successful) in which he employed the method of Wyeth in shoulder amputation (Annals of Surgery XVIII, 93, 321.)

honeycombed with tubercular sinuses. There were evidences of incipient phthisis.

Dr. Nancrede operated by Wyeth's method and patient recovered without a bad symptom.

*Case 7.*—Lanphear's first case.—H. M., male, colored, age 9, suffering of osteo-myelitis of femoral shaft. An operation was made Oct. 21, 1890, for the relief of the diseased tissue, but on October 24 his condition was so desperate that there could be no longer any delay. On October 24 Wyeth's amputation was made. Scarcely one ounce of blood was lost. Convalescence was rapid.

*Case 8.*—Lanphear's second case.—O. M., male, age 15. Osteo-myelitis of entire shaft with profound septicemia. Amputation April 19, 1892, by a modification of Wyeth's method. About two ounces of blood lost by parenchymatous oozing. Operation completed in twenty-nine minutes from beginning of anesthesia. Death by septicemia.

*Case 9.*—Lanphear's third case.—Miss A., age 28. Had been subjected to a series of amputations for the relief of a violent neuralgic pain. The great toe had been first amputated by the physician; no relief. A few months afterward another surgeon made a Chopart's amputation. Subsequently the leg was amputated just above the ankle and later just below the knee. Still no relief, whereupon a supra-condyloid amputation was made. No amelioration being accomplished, a sixth amputation was made through the middle of the thigh. After repeated examinations, Dr. Lanphear reluctantly, at the urgent request of her physician, amputated the seventh time, at the hip, employing his modification of Wyeth's method.

There was no loss of blood. Recovery rapid and complete. No recurrence of pain.

*Case 10.*—Lanphear's fourth case.—F. P., male, age 28. Some years previously amputation had been made through the thigh for injury to knee. Abscesses formed from wearing an artificial limb. When seen by Lanphear was pale, very anemic, suffering from septicemia. Amputation at hip Feb. 24, 1893, by Lanphear's modification of Wyeth's method. More blood lost than in any one of the others, owing to the profunda being overlooked, due to its high origin, until after the constrictor was removed. Patient, however, did well although recovery was somewhat retarded by suppuration of the stump.

*Case 11.*—Ahern's case, Quebec.—Male, age 22. Operation called for by large osteo-sarcoma of the lower end of femur. About two ounces of blood lost. Although not explicitly stated, I judge from context that the patient recovered.

*Case 12.*—J. McFadden Gaston.—Patient, male, with very large cystic sarcoma of left thigh, involving the bone. The cyst was first evacuated, several gallons (?) of a dark brown fluid being drawn out. The cyst filled rapidly. Hip amputation was decided upon. Under the A. C. E. mixture, assisted by Drs. Price, Boland, Renouff, Nicholson, Giddings, Earnest and Divine, Wyeth's operation was done. There was a considerable loss of blood, largely from a general oozing, which, uncontrolled by hot carbolized water, was finally stopped by sponging with a mixture of spirits of turpentine and camphor.

There was little shock, easily controlled by hypodermatic injections of ether and whisky. For twenty-four hours he did well, until there supervened a diarrhea which became colliquative and continued for ten days in spite of the most energetic measures. He died on the twenty-sixth day after the operation.

Dr. Gaston thought the lowering of the vitality from the diarrhea had much to do with the fatal termination, but, he remarks, it would appear that the failure at one time to open the stump for three days led to septic contamination, which was the immediate cause of death. But for this oversight, he thinks, the case ought to have had a favorable termination. The amputated part after two gallons of fluid had been removed weighed seventy-three pounds.

*Case 13.*—W. W. Keen, Philadelphia.—Patient, female, age 30, five months pregnant. Present trouble began seventeen months ago, during previous pregnancy, with swelling of both legs, especially the left. After delivery, pain and swelling diminished, but a lump remained in left popliteal space. In May 1891, this became very painful. The pains were sharp and shooting in character. The tumor increased in size until at time of operation it extended from the calf to the groin, measuring twelve and five-tenths inches in length and twenty-three inches in circumference at the lower part of the thigh. Lymphatics not enlarged.

*Operation.*—Patient was wrapped entirely in raw cotton except diseased limb. No blood lost from stump until after the large vessels had been secured. Thirty-three ligatures in all applied. Probably eight to ten ounces of blood were lost. Duration of operation fifty minutes. Delay caused by separation of soft parts from the bone and the securing of the numerous vessels. Two drainage tubes were used, but the operator remarked he would in future cases use but one, placing this externally, to prevent infection, since in this case suppuration occurred from infection through the inner tube. The progress of the case was, however, uninterruptedly good and the case ended in recovery.

*Case 14.*—J. D. Thomas of Pittsburg, Pa.—G. S., age 18, male, injured in a rolling mill by a red-hot bar of iron, one-half inch in diameter, which was thrust into his left thigh about two and one-half inches below Poupart's ligament, going through the long saphenous vein, the femoral vein and femoral artery. The opening was funnel-shaped, admitting two fingers for a little distance, one finger only being permitted to pass beyond. This passed some distance around the inner and posterior aspects of femur. At the time of accident he lost a large quantity of blood. Although the indication for hip amputation was so clear, the parents would not permit it at first and only consented five or six days later when gangrene had set in. Wyeth's operation was done successfully and the condition was at first promising until the end of the second day, when he began to fail and died at 8 P.M. Thomas very justly remarks the operation might have resulted in recovery if it had been done four days earlier, when it was strongly urged.

I have been able to obtain only brief notes of the following cases:

*Case 15.*—Dr. John A. Wyeth, New York;[2] female, age 18; for sarcoma; recovered.

*Case 16.*—Dr. A. M. Phelps, New York;[3] male, age 58; sarcoma; recovered.

*Case 17.*—Dr. A. J. McCosh;[2] male, age 28; sarcoma; recovered.

*Case 18.*—Dr. J. Ewing Mears, Philadelphia;[3] male, age 9; osteo-myelitis; recovered.

*Case 19.*—Dr. Archibald E. Mallock, Canada;[2] male, age 29; osteo-myelitis; recovered.

*Case 20.*—Dr. G. A. Baxter, Chattanooga;[3] male, age 17; railroad injury, causing pulpefaction of both lower limbs, requiring amputation through right leg and left hip. Died of shock.

In addition to these cases, which are all I could positively verify or could get a statement of the result of, I have obtained the following from a paper[4] kindly sent me by Dr. Wyeth, for presentation to this meeting:

Case 21.—Dr. Frank Hartley, March, 1892; female, age 26; osteo-sarcoma; recovered.

Case 22.—Dr. Merrill Ricketts, 1893; female, age 23; osteo-sarcoma; recovered.

Case 23.—Dr. C. A. White, 1891; male, age 23; osteo-sarcoma; recovered.

Case 24.—Dr. J. B. Murdoch, 1892; male, age 17; osteo-sarcoma; died.

Case 25.—Dr. A. M. Phelps, 1891; male, age 24; osteo-arthritis; recovered.

Case 26.—Dr. A. M. Phelps, 1892; male, age 16; osteo-myelitis; recovered.

Case 27.—Dr. C. B. Nancrede, 1893; male, age 31; osteo-myelitis; recovered.

Case 28.—Dr. S. H. Pinkerton, Salt Lake City, 1892; male, age 17; tubercular osteitis; recovered.

Case 29.—Dr. S. H. Pinkerton, 1892; male, age 10; tubercular osteitis; recovered.

Case 30.—Dr. S. H. Pinkerton, 1892; male, age 42; necrosis; recovered.

Case 31.—Dr. S. H. Pinkerton, 1892; male, age 43; necrosis; died.

Case 32.—Dr. S. H. Pinkerton, 1892; male, age 17; osteitis; recovered.

Case 33.—Dr. R. L. Swan, Dublin, Ireland, 1892; female, age 19; chronic osteo-arthritis; recovered.

Case 34.—Dr. W. B. Johnston, 1892; male, age 39; railroad injury; died.

[2] Transactions Medical Association of Alabama, 1892, p. 415.

[3] Transactions Medical Association of Alabama, 1892, p. 415. [Dr. Baxter also made mention of this case in the discussion of my paper at the meeting of the Southern Surgical and Gynecological Association.]

[4] Paper read by Dr. Wyeth at the meeting of the New York State Medical Association, Oct. 9, 10, 11 and 12, 1893.

Case 35.—Dr. S. H. Pinkerton, 1892; male, age 6; gunshot fracture; died.

Case 36.—Dr. H. O. Walker, 1892; male, age 14; osteo-sarcoma; recovered.

Case 37.—Dr. H. O. Walker, 1893; male, age 21; chronic hip disease; recovered.

Case 38.—Dr. H. O. Walker, 1893; young man; chronic hip disease; died.

Case 39.—Dr. John B. Deaver,[5] 1893; male, age 20; osteomyelitis; recovered.

Case 40.—Dr. F. W. Parham, 1893; male, age 3; sarcoma of thigh; recovered.

McCurdy has also operated with his modification, but I have not been able to collect the data of the cases. Case No. 40 is my own and is as follows:

Case 40.—John Murdock, age 3 years, a native of New Orleans, applied for admission into children's ward of the Charity Hospital May 8, 1893, service of Dr. E. D. Fenner, to whom and to the Interne, Mr. Oechsner, in charge of the ward, I am indebted for the notes of the case during his stay in the ward. On admission, there was a large growth, size of an adult heart, situated on the inner aspect of right thigh. The tumor was easily enucleated. The sciatic nerve ran posteriorly in the capsule of the tumor, and the femoral vessels were pushed to the inner side. The incision was made from a little above middle of Scarpa's triangle to a point about two and one-half inches above the internal condyle. Union was rapid and satisfactory and the little fellow was discharged, apparently cured, May 31.

He was re-admitted to the ward July 11, 1893. Three weeks previous to second admission, the mother noticed a new growth in the site of the operation. When first observed it was about the size of a pigeon's egg. It grew very rapidly; when admitted July 11 was as large as the first tumor above described. The second operation was done July 12, 1893. The tumor was not easily enucleated as in first instance, being incorporated with surrounding tissues, and had to be removed by dissection. The wound did well and patient was discharged for the second time on July 30, 1893.

Two microscopic examinations were made, in the Pathologic Department of the Hospital, of specimens of the two tumors removed. July 12, the report was returned: "Sarcoma round- and spindle-celled; cells large and plump." July 19, the report was: "Sarcoma, spindle- and small round-celled."

On Tuesday, Oct. 3, 1893, I was asked to see the child with the attending physician, Dr. J. T. Scott. I found the little fellow rather anemic, but lively and able to go about, though rather awkwardly, without the aid of crutches. There was an immense tumor, which I here show you, occupying nearly the whole inner aspect of thigh and filling the popliteal space. The tumor was of firm consistency. Previous history good. The mother attributes the trouble to a severe fall he had sustained in the latter part of March of this year. Some time in April she noticed the swelling. It increased rapidly and she sought advice at the Hospital. Up to the time he entered the Hospital, his health was good. The history of case while in Hospital from May 8 to July 30, has been above detailed. After leaving there, the tumor soon began to show signs of return. The parents took the child East, where they consulted Dr. Deaver in Philadelphia. The Doctor advised amputation at the hip, but suggested that it might be best to do it at home in New Orleans. They returned to New Orleans and consulted their family physician, Dr. J. T. Scott. He asked me to see the case. We examined the child as above on Oct. 3, 1893. I urged amputation at once. The glands in the groin were slightly enlarged, probably not from sarcomatous infiltration, but the tumor was growing now with great rapidity. The parents readily gave consent. Accordingly, removal to the New Orleans Sanitarium was advised. On Thursday, Oct. 5, 1893, the operation was done in the operating room of that institution. Chloroform was the anesthetic, Dr. J. T. Scott administering it. I was assisted in the operation by Drs. E. D. Fenner and W. E. Parker. The Esmarch band was applied up to the lower border of the tumor, the tumor not being included for obvious reasons. The operation was conducted exactly according to the directions of Dr. Wyeth.

Ordinary mattress needles were used, one end being cut off at the eye. They were very rusty and dirty and had to be sandpapered and disinfected by boiling and carbolic solution. In placing the outer needle, I got the posterior end out of the plane of the inner needle. I withdrew it and placed it so that the tube would touch both needles, both in front and behind. Thus I had to make three punctures. No harm resulted from this. Little blood was lost from the stump, but a good deal came from the turgid vessels of the tumor. My intention was to adopt the suggestion of Murdoch, and not to saw the bone but to disarticulate the femur entire. I found it difficult, however, to get the posterior vessels and saw that I should save time really by sawing the bone. The vessels of stump being secured, I made the longitudinal incision and had little trouble in disarticulating. I found low section of the bone a decided advantage in disarticulating.

Rather smart hemorrhage occurred during the disarticulating, the tube having been removed. I think it very advisable to place the outer pin higher, so that the bone may be entirely removed before any vessels are secured. In that case, it would be best not to saw, but to remove the extremity in its entirety. The operation lasted from beginning of anesthesia to application of dressing, one hour and a half, but a good part of the time was consumed with the anesthetic, it being at one time necessary to suspend the child head downward, in order to restore him. His condition was so bad for a time that I thought I should not be able to suture the flaps, but he finally revived sufficiently and the operation was completed, one drainage tube only being used, placed in the upper end of the lateral incision. October 6, day after operation, redressed on account of great oozing. A drop of pus oozed from one of the pin holes.

October 7. Redressed. Drainage tube removed. From this time on, almost daily dressing had to be made, owing to urine infiltration. Rubber tissue was used, which protected the line of apposition until the gauze became soaked from above. A discharge from the rectum also gave considerable trouble. October 19. The stump is closed, but the skin has opened a little, exposing a line of granulations. Rubber adhesive strips applied. October 24. Complete deep and superficial union. The temperature had risen several times above 101 degrees, but for the first two weeks marked 100 to 100.5 degrees. After this it fell to normal. Catgut was used for ligating the vessels and silkworm gut for the flaps. A liberal estimate would make the blood lost during the whole operation not over two ounces, I think much less. There was no further suppuration from the pin hole after the first twenty-four hours.

Here we have a report of forty cases classified as follows by Dr. Wyeth:

Sarcoma, 17 cases, 2 deaths, 11.76 per cent.
Osteo-myelitis, 18 cases, 3 deaths, 16.6 per cent.
Injury, 4 cases, 4 deaths, 100 per cent.
Neuralgic affections from nerve injury, 1 case, no deaths.
For disease, 36 cases, 5 deaths, 13.88 per cent.
For injury, 4 cases, 4 deaths, 100 per cent.
For both disease and injury, 40 cases, 9 deaths, 22.5 per cent.

Wyeth gives Ashhurst's statistics as follows:

64.1 per cent.
For disease, 276 cases, 40.2 per cent.
For injury, 309 cases, 82.4 per cent.

Luning gives:

Gunshot wounds, 239 cases, 98 per cent.
Disease, 153 cases, 42 per cent.

Emory Lanphear in an article[6] on Wyeth's amputation referring to these same statistics of Luning says, "Surely this is a method which is about as successful as could well be expected, considering the gravity of the operation." Other statistics put the mortality even higher, but taking these as a guide, we find that Wyeth's operation has reduced the mortality for civil practice just one-half. It has not yet been employed in military practice. With such a reduction in mortality, we can well overlook the sneer of Treves, that, "if the after-oozing be taken into account" the operation "can not be regarded as bloodless."

Richard Davy of London, reports a series of ten amputations in nine of which he used his lever. The mortality, formerly 60 per cent., is reduced to 20 per

[5] In this case Dr. Deaver abandoned the pins and used the tube held up by two tapes, one in front and one behind.

[6] American Journal of Surgery and Gynecology, Kansas City, 1893, III, 182-186.

cent. "Sir Joseph Lister mentions 'a case in which a gentleman specially conversant with the use of the lever failed to bring it into effective action and another . . . . where death resulted from mischief done by the end of the rod working in the dark'." I do not think this can be compared to Wyeth's for either efficiency or safety. The method of Jordan Lloyd is effective if the tube does not slip, but is more awkward and requires a special assistant to hold the ends. Wyeth's will take care of itself, until taken off.

Ligation of the femoral artery as recommended by Baron Larrey, somewhat complicates the operation by delaying it, and does not control the posterior hemorrhage.

Lister's aortic tourniquet has been used, but is now abandoned by its author for other methods. Poppert reports one successful case in which he ligated first the common iliac. The method of Buchanan and Hardy of controlling the hemorrhage through an abdominal incision, although successfully done by Hardy, will scarcely meet with the approbation of surgeons.

The method of Pean, of catching the vessels as he proceeds is open to the serious objection of being very slow.

I come now to the skewer methods.

Trendelenburg transfixes the thigh by a single needle passed in front of the neck of the femur and beneath the vessels. Over the ends of the needle and in front of the thigh a compressing rubber cord is passed. Dr. Varick transfixed a second time behind the femur before disarticulating.

Robert John Garden of Aberdeen, writes thus in the *British Medical Journal* of Jan. 4, 1890: "I have had considerable experience of amputation at the hip-joint. The result has been uniformly successful, as in my fourteen cases I have had no death due to the operation. All my cases recovered except a child aged 9 months (whose leg was removed for a large sarcoma of thigh), who died of measles contracted after the operation. So far as cutting the flaps is concerned, I pretty much followed the plan recommended by Furneaux-Jordan, combined with the skewer securing of the vessels as suggested by Spence. My experience does not lead me to regard the risk from shock as very great. The operation as described above removes the wound well away from the anus, and by the skewer method, both when antero-posterior and lateral flaps are formed, all danger from bleeding is effectually removed."

The method of Spence seems to be the same as that now described as Myles'. Myles thrusts a stout steel skewer straight through the thigh from before backwards. The point enters an inch below Poupart's ligament and just to the outer edge of the femoral artery it passes to the inner side of the neck of the femur and emerges a little above the gluteal fold. An india rubber cord is passed around the ends in figure-of-eight manner.

I shall consider now the modifications of the Wyeth method proper. Lanphear makes the excellent suggestion to place the outer needle high enough to permit of disarticulation before removing the tube. This saves much time and the hemorrhage is diminished. In this case I would disarticulate without section of the bone.

Thomas advises to place the tube in position first and put the pins through with the tube as a guide regardless of the position of the spine of the ilium. He advises also to clear the bone thoroughly before beginning the disarticulation. These are both good practical suggestions.

We may consider here Senn's method. This is especially applicable to those cases where an excision is first to be attempted, but is abandoned for hip amputation. Lanphear refers to one case in which the patient bled to death while on the table, Senn's method being used.

Finally, I have McCurdy's method to speak of. By this method a flap operation with immediate disarticulation may be done. A single needle is used, inserted at the most prominent point of the great trochanter, passing directly through the thigh in front of the femur to come out just below tuber ischii. This very closely resembles that of Myles' already referred to.

The most unfavorable opinion of the operation is that expressed by Nancrede. "There is," he says, "one serious objection to Wyeth's method; this is the length of time it takes, which adds greatly to the shock." After completing one serious operation, which has produced an extreme degree of shock, another major operation, that of excision is then undertaken. Where skilled assistants are not at hand he thinks the method applicable.

I believe, however, by placing the outer pin higher these objections can be overcome to a large extent. We can then do as Murdoch suggests and disarticulate without hemorrhage, rapidly and without sawing the femur.

In conclusion, I am inclined to agree with Murdoch, that the method of Wyeth is the best yet devised for amputation through the hip joint.

## BOOK NOTICES.

**An Analysis of Medical Ethics and Etiquette.** The Code of Ethics adopted by the AMERICAN MEDICAL ASSOCIATION, with commentaries, by AUSTIN FLINT, M.D. 12mo. pp. 97. New York: D. Appleton & Co. 1893.

The following analysis of this book, which every physician should have, is intended as a special plea for the maintenance of the American Code of Medical Ethics as it now stands.

The work begins with a modest preface, characteristic of the truth-loving and guileless author who died full of years and honors, deeply regretted by all who knew him. The commentaries, which show ripe scholarship, good taste and loftiness of mind, were composed in moments snatched from his hours of rest and were truly a labor of love.

In the introductory remarks the author says: "A reader who has given to the subject little or no attention may be supposed to ask, 'wherefore the propriety of recognizing the principles of duty applied to medicine as constituting a distinct branch of ethical science? Are not the rules in ethics which would govern the practitioner of medicine the same as in other applications?' There are certain fundamental truths which, of course, underlie all possible applications of ethics; but the adaptation to different conditions of life call for a separate consideration. . . . The rules of conduct adapted to the peculiarities of medicine constitute medical ethics. These rules have a moral weight. Medical etiquette, on the other hand, consists of the forms to be observed in professional intercourse. These are conventional. They have not the binding force of ethical rules; nevertheless, they claim observance. The medical profession re-

ceives not a little ridicule for observing rules of etiquette, but their observance is a protection against not only embarrassment and confusion, but misapprehensions and dissensions, injurious alike to physicians and patients. If there be ground for a distinct system of ethics applied to medicine, the rules of conduct which the system requires should be codified. A code of ethics adopted by the profession represents the views held by the majority of its members, and is, therefore, binding on all. It is indispensable for the sake of reference whenever differences of opinion arise. It indicates the proper course to those whose moral perceptions may be defective. It may prove a safeguard against the bias of personal interests. It thus contributes to the purity and dignity of the medical profession. Much would be gained in the popular respect for the profession, were the public better acquainted than they are with the ethical rules by which its members assume to be governed. It is, perhaps, a common impression that the objects of a code of medical ethics have exclusive reference to the interests of the medical profession. So far from this, the objects are of far more importance to the public welfare than to physicians." . . . Farther on in the introduction he gives the origin of the Code, and then concludes with a statement of the arrangement proposed for the commentaries. The work is divided into three chapters, which embrace the entire Code, and to each section of the Code appropriate comments are appended.

## CHAPTER I.

### THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

#### ARTICLE I.—*Duties of Physicians to their Patients.*

SECTION 1—of this Article is so clearly defined and so well adapted to the instruction of young physicians, that it is difficult to conceive what could have induced any physician to suggest its suppression. That its provisions are self-evident to physicians of experience is not doubted, but they are all necessary for the information of beginners, and are as brief as consistent with distinct statement. "They antagonize," says Dr. Flint, "undue influences arising from self-conceit, an irritable temper, indolence, devotion to pleasure or to occupations which divert from professional duties, and all mercenary considerations. At the same time, they do not contravene self-respect and a proper regard for personal interests." There surely is no doubt of the necessity to tell young physicians of their obligations to obey promptly the calls of the sick; that their mission is always one of mercy; that the responsibility they incur in the discharge of their duties is great, and that since their work is generally performed in privacy, the only punishment for carelessness or neglect is through the stings of conscience and the loss of self-respect. These injunctions and all others in the Code are ennobling and serve to soften the manners and expand the affections of the young, and form them to that propriety and dignity of conduct which are essential to the character of gentlemen. (Percival.) The third sentence of this first Section is a wholesome amplification of the preceding sentences, and its appropriateness will probably be admitted by the majority of readers. The last sentence of this Section has been very harshly and unfairly criticised on various occasions. Careful examination shows that it is clear, that its words were well chosen, and that it is necessary. How merciful on the part of the physician, how comforting to the patient, when firmness is tempered with tenderness; how noble it is in the physician to be tenderly firm, and how necessary it often is for the physician to be condescending; that is, to be yielding in minor details so that his authority may be greater in important particulars for the good of the sufferer! And how can he fail to inspire gratitude, respect and confidence, if he observe these injunctions in letter and spirit?

SEC. 2.—In the first sentence of this Section the word attention, which occurs in the third sentence of the preceding Section, is repeated, but the repetition seems justifiable. The whole sentence, indeed, is complementary to that third sentence, and gives greater force to the injunction. The second sentence is rightly placed and pertinent. Bodily infirmity often leads to mental imbecility, or to unreasonable caprices, therefore young physicians are enjoined to be indulgent and to make due allowance for the whims of the afflicted. None can, with justice, object to the three sentences that relate to the observance of secrecy, which are paraphrased from the Hippocratic oath, and there is not a court of law in the United States that is likely to refuse protection to the physician in the circumstances detailed in this Section. The commentaries of Dr. Flint on this second Section fill ten pages and are well worthy of careful study.

SEC. 3—is short, incisive, explicit, self-explanatory, and necessary. It receives from the able pen of Dr. Flint an appropriate commentary which is quite sufficient to show its great utility.

SEC. 4—is the longest in the Code; it contains a little more than two hundred words in six aphoristic sentences, and is so instructive and valuable to young physicians that not a single part or word should be retrenched. "Undue solemnity, anxiety and apprehension in the looks, manner or words of a medical attendant on the sick, are extremely unfortunate—they discourage patients; whereas, on the other hand, a cheerful mien, calmness of deportment, and verbal assurances, sometimes accomplish more than drugs." All that is embodied in this Section is self-evident and well known to experienced physicians, but is absolutely necessary for beginners.

SEC. 5—contains wholesome admonitions to young physicians who are too apt to form gloomy prognostications in cases of serious disease, and sometimes even to abandon the patient, thinking there is no hope of his recovery and being delicate respecting the demand of fees which they believed might not be honestly earned should they continue their visits. The very time of the cessation of such visits may have been the climax of a crisis which, ending soon after the arrival of another physician, is followed by rapid recovery. In such a case the retiring physician is discredited by the family, even if his successor explains the case and honestly endeavors to exonerate him. This alone gives great value to Section 5, but it contains other points of no less value. Moreover, in truly hopeless cases, the physician "can often do much toward lessening pain or discomfort—mental and physical; he can contribute to euthanasia, and he can comfort those who surround the bed of death by assurances that in the 'last agony,' as it is miscalled, these manifestations of distress are usually unattended by conscious suffering."

SEC. 6.—The perusal of Dr. Flint's commentaries will convince the most incredulous of the necessity of this Section. He says in the concluding sentences: "Consultations, when their true objects are recognized by all parties, are of great comfort to an attending physician. Undoubtedly, a reason for their being distasteful to him often is a want of full confidence in the honor of the consulting physician. Hence, it is important that physicians comply conscientiously with the rules laid down in respect of consultations."

SEC. 7—is quite as important as any other Section of Article 1: "It is undoubtedly true that persons will often listen more considerately to counsels or remonstrances from a medical adviser than to those of relatives, friends and neighbors, or even to the admonitions of the clergy. It is, perhaps, true that most persons are influenced more

by considerations which have reference to life and health than to those which appeal directly to the moral nature." These two sentences show but a small part of the excellent advice compressed in less than a page of Dr. Flint's precious work.

ARTICLE II.—*Obligations of Patients to their Physicians.*

Dr. Flint prefaces this Article as follows: "There are several reasons why this portion of the Code calls for but little in the way of commentary. In the first place, the commentator being a member of the medical profession, it is a matter of delicacy not to dilate too largely on the obligations of patients to their physicians. In the second place, although in the preparation of these commentaries the hope is entertained that they will have interest for non-medical readers, there is probably little ground for the expectation that they will have an extensive popular circulation. In the third place, a large proportion of patients are fully sensible of their obligations to their physicians; and, lastly, the portion of the Code which defines the obligations of patients to their physicians is so clear and comprehensive as not to offer much scope for addition or elucidation. For these reasons, instead of making each subdivision a separate heading for comments, the entire Article will be first given, and afterward, brief remarks on the topics which it embraces, following the order in which they are presented in the Code."

SECTIONS 1 TO 10 INCLUSIVE.—Although the author says, in his prefatory note, that this Article calls for but little in the way of commentary, he nevertheless comments on its ten Sections in five pages, and in the most attractive and lucid style which can not fail to carry the fullest conviction of the necessity of every syllable contained in the Article.

## CHAPTER II.

### OF THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

ARTICLE I.—*Duties for the Support of Professional Character.*

SECTIONS 1, 3, 4, 5.—The detractors of the Code seem to regard the first, third, fourth and fifth Sections of this Article as unnecessary. They entertain this baseless opinion, probably because they have not read the Article with sufficient attention or reflection. The following passages are therefore extracted from Dr. Flint's commentaries to show the utility of these Sections, particularly to young physicians: "It may be said that the sentiments expressed in relation to the 'duties for the support of professional character,' contained in the first two Sections under this head, are mere truisms and platitudes. This may be said with regard to any collection of ethical principles for the regulation of human conduct. Experience shows the importance of the embodiment in language of moral principles pertaining to other of the relations of life, and there is reason to believe that this portion of the Code has not an inconsiderable influence upon the character of the profession, by inciting its members to become worthy of it, and to render it still more worthy of the estimation in which it is generally held by the public."

The fourth Section must be especially disliked by the dissenters, on account of the nature of its sentiments which are so distinctly stated as to allow no chance for misunderstanding, either in letter or spirit.' Dr. Flint thus comments on this important Section: "There can be no difference of opinion in the minds of worthy physicians as to the acts which in the fourth Section of this Article are specified as derogatory to the dignity of the profession. But the propriety of the interdiction of these acts by the Code is not always appreciated by the public. As a reason for their being interdicted as 'highly reprehensible in a regular physician,' it suffices to say that 'they are the ordinary practices of empyrics.' The public should understand that these practices are criteria of irregular or unworthy practitioners. With this understanding, if persons consent to be influenced by such acts, the responsibility for consequences lies with themselves. The credulity in regard to therapeutics, which is inherent in the minds of many, will doubtless always afford encouragement for a continuance of the various meretricious methods of obtaining credit for superior medical or surgical skill."

The fifth Section, which is as concise as it is explicit, is doubtless regarded as oppressive by many offenders. Here are Dr. Flint's remarks upon its provisions: "The grounds for the injunction not to patent remedies or surgical instruments, and not to dispense secret nostrums, are not always appreciated by the public. Some appear to think that it is dictated by jealousy or professional prejudice. The reasons are concisely but clearly stated in the Code. Imagine Jenner to have applied for a patent giving exclusive property in vaccination, or keeping it a secret! How different would the names of those identified with the discovery and introduction of anesthesia in surgical and medical practice appear in history, had the attempt not been made to withhold from the profession and the public the agent employed, and to secure a proprietary interest therein! Here, as in all other instances, the restrictions of the Code of Ethics have reference to the welfare of the community, and not to the selfish interests of the medical profession."

SEC. 2—of this Article is not contained in Dr. Flint's book, probably because he took for his commentaries the original Code of 1847; this second Section having since been inserted. It explains itself and will surely not be objected to by the profession.

ARTICLE II.—*Professional Services of Physicians to Each Other.*

SECTION 1.—Only a few extracts are made from the brief but wise commentary to this Article: "From the best motives, the professional friends . . . . of a sick physician are apt to call upon him, inquire into his case, proffering their opinions and advice, without any concert between them, and the result is that a medical patient may receive no systematic treatment. . . . . Except in cases where close intimacy dictates a deviation from the rule, a physician should not ask to see another physician in illness until requested to do so. The manifestations of interest and sympathy should be limited to kind messages and inquiries through others. . . . . Medical services rendered to members of the profession should be gratuitous. . . . . A request to present a bill for services . . . . should never be made. Such a request implies an expectation that it will not be complied with. Any pecuniary acknowledgment by a member of the profession for medical services should be made strictly as an honorarium."

ARTICLE III.—*Of the Duties of Physicians as Respects Vicarious Offices.*

SECTION 1.—This Article was lately objected to by a dissenting writer who wished it expunged on the ground that it "refers to a question regulated by custom," losing sight of the fact that the Code is a statement of well-established customs or ethics. The following extracts from Dr. Flint's commentary are intended to show the necessity of retaining this third Article: "The Code of Ethics defines the line of conduct in many instances of which it may be said that a proper courtesy and sense of honor should suffice without formal ethical rules. Assuming that an adequate degree of courtesy and sense of honor belong to members of the medical profession in general; to assume this for all members would be to claim for medicine, in a moral point of view, a position far above that of any other pursuit. Ethical rules, therefore, are needed for a greater or less number of physicians. But, irrespective of any question of moral delinquency, rules are useful by indicating precisely what is to be done under certain circumstances, thus preventing embarrassment and saving the trouble of discussion in particular instances. . . . . Vicarious offices offer an opportunity for one deficient in a proper sense of honor to undermine the confidence of patients in their physicians. This may be done, not openly, but insidiously, by questions, expressions of surprise, over-assiduous attentions, etc. It will do much toward neutralizing such violations of honor, if the public be made acquainted with the article of the Code which relates to these offices. Patients will be led to understand the motive which prompts such dishonorable

efforts, and, so far from accomplishing the objects, they will justly react upon unworthy members who act in opposition to the spirit of the Code. . . ."

ARTICLE IV.—*Of the Duties of Physicians in Regard to Consultations.*

SECTION 1.—This Section of the fourth Article seems to be the objective point of those who desire revision of the Code, their aim being to expunge the whole of the first Section. Dr. Flint says: ". . . . of the entire Code this Section alone has occasioned dissension." He further says that he is "one of many who think that the Code is here open to objection; not, however, in spirit or intent, but in phraseology. The last sentence is the part concerning which an objection may fairly be raised. . . . ' "The real objection to those whose practice is based upon an exclusive dogma is that they are opposed to the regularly organized profession and use adjectival titles as trade-marks. No therapeutic differences could exclude them from the regular profession if they were to drop their distinctive titles and abide by the laws of the profession. The most liberal explanatory declarations were made, after the publication of Dr. Flint's commentaries, by the AMERICAN MEDICAL ASSOCIATION, through a special committee of which Dr. Flint was a member, thus entirely disposing of this question.

All of Dr. Flint's comments on this first Section are well worthy of insertion, but a few extracts from them will suffice to show how temperately he has written: "It is fair to conclude that the framers of the Code had no feeling of illiberality, and no intention to interfere with the practice of medicine, under any circumstances, in the cause of humanity. The Code declares explicitly that, 'in consultations the good of the patient is the sole object in view,' and enjoins against declining consultations on the score of fastidiousness. The restrictions of the Code are in nowise inconsistent with the demands of humanity in cases of emergency."

"In saying that certain practitioners are not to be considered as regular or fit associates in consultation, it is neither said nor implied that a physician should not see a patient even with these practitioners when humanity requires him to do so. The tenor and spirit of the Code throughout are opposed to any act of professional inhumanity. Moreover, in particular cases, the physician must be the judge of his duty in this regard. Practically, there need be no difficulty how to obey the dictates of humanity and, at the same time, conform to the Code, under the guidance of a conscientious regard for both. The objectionable point in the Code is that which makes 'a practice based on an exclusive dogma' the ground of a refusal to meet practitioners in consultation. This is not a valid objection. Any physician has a right either to originate or adopt an exclusive dogma, however irrational or absurd it may be. Dogmas have prevailed more or less in the past history of medicine. If in a consultation there be lack of agreement respecting either diagnosis or treatment, the Code indicates in another Article precisely the course to be pursued. The true ground for refusing fellowship in consultations, as in other respects, is a name and an organization distinct from, and opposed to the medical profession. Whenever practitioners assume a distinctive appellation, thereby assuming to represent an essentially distinct system of practice, taking an attitude of antagonism to the regular profession, seeking popular favor on the ground that they belong to a 'new school,' based on truth and productive of good, whereas the regular profession belong to an 'old school,' based on error and productive of harm—how can there be fellowship either in consultations or in other respects? If they who thus assume an attitude of antagonism to the medical profession conscientiously hold to the distinctive tenets which, as they profess, are the ground of their antagonism, how can they consistently desire to meet members of the latter in consultation; and, with opposing views of therapeutics, how could such consultations accomplish the 'sole object in view,' namely, 'the good of the patient?' If such consultations were permissible, professional fellowship would be rendered immoral on the ground of complicity in a fraud upon the public. It is hoped that the body from which the Code emanated—namely, the AMERICAN MEDICAL ASSOCIATION—will adopt such modification in the phraseology of this Section as will place restrictions on consultation, not on the ground of doctrines or forms of belief, but on separation from and avowed antagonism to the medical profession."

Dr. Flint's hope was soon realized, for the AMERICAN MEDICAL ASSOCIATION adopted the series of explanatory declarations to which reference has already been made. "Under no circumstances can there consistently be fellowship with any class of practitioners who adopt a distinctive title as a trade-mark, and who are banded in order to impair the confidence of the public in the medical profession. To take the ground that, because the Legislature of a State has placed on an equal legal footing, different classes of practitioners, those of one class can not refuse to consult with those of another class, is as absurd as to assert that a Jewish Rabbi is bound to exchange pulpits with Christian ministers, or the latter to affiliate with Mormon elders for the reason that, in the eye of the law, in this country, all religious denominations have equal rights. The people demand of their legislators the enactment of laws for the protection of life, liberty and property, but they do not look to them for the institution or the interpretation of codes of ethics. . . .

"There are many, not of the medical profession, who have been led to believe that its members are bound to uphold antiquated traditional doctrines. Many seem to think that the 'old school practitioners,' as they are derisively called, are committed to a system of practice expressed by the term, allopathy. All medical men know that, so far from these popular notions being true, they are quite the reverse of the truth. . . . . Allopathy . . . . is simply a term of reproach. It has no pertinency as applied to the medical profession. As is well known by all conversant with the history of medicine, doctrines and practice undergo changes in proportion to the advancement in the several branches of medical knowledge and accumulated experience. The tendency, certainly, within the last half century has been to adopt new views too readily, not heeding sufficiently the restraints of a rational conservatism. It is desirable that the public should understand that the medical profession is in no sense a sect, as implied by the name, allopathy. It allows the utmost latitude of opinion. The sectarians in medicine are those who have professed faith in tenets to which they are bound, at least ostensibly, to adhere. Opinions held by members of the regular profession, however at variance with those generally entertained, and however absurd, may fairly give rise to criticism and ridicule, but they can not be made occasions for professional discipline. With a proper understanding of the reasons which actuate members of the medical profession in declining to meet irregular practitioners, their action can not be attributed to either jealousy or prejudice. Their action, indeed, may involve the sacrifice of personal interests, and it concerns the public welfare not less than the dignity and honor of the profession. Let the statement be repeated, until no longer necessary for the information of the public, that there are no allopathic practitioners of medicine. A regular member of the medical profession should never even tacitly admit the propriety for this designation. Let it be understood by the public, as well as by the profession, that there is no necessity for a schismatic separation from the regular profession on account of any peculiarity of doctrine. Such a separation is not from necessity but for the purpose of obtaining practice."

SECS. 2, 7, 10.—"These three Sections of Article IV, although not occurring consecutively in the Code, are here collocated because they contain ethical rules which have reference to the relations of consulting with attending physicians." The following passages in the commentaries on these three Sections serve to show what are some of the popular errors respecting consultations of physicians: "One of these errors is that a consultation, when requested by patients or their friends, implies, as a matter of course, dissatisfaction with the services of the physician in attendance. The request should never be considered in that light. Connected with this error is another, namely, that it is the office of a consulting physician to pronounce a judicial decision respecting the treatment which has been pursued, or which is being pursued, by the physician with whom he is requested to consult. This is not the office of a consulting physician. He should be reserved in forming an opinion as to past treatment, inasmuch as the case was not under his observation, and it would be unfair to judge of circumstances which he had not observed; hence, an opinion unfavorable to the past treatment, if indiscreetly formed and still more indiscreetly uttered to any but the attending physician, might do the latter great injustice. . . . . Still another error is to assume that a physician in consultation has more knowledge or skill than the attending physician, and that, consequently, the latter is to be subordinate to the former in the management of a case. A consulting physician may or may not be the superior in knowledge or skill. . . . . These errors, prevailing somewhat in the profession, have a much greater popular prevalence. It is owing to their prevalence that medi-

cal consultations are not more frequent. Patients and their friends often hesitate to propose a consultation from a desire not to imply want of confidence in the attending physician. . . . . The true ground for a medical consultation is the benefit which may be derived by bringing the judgment of two or more minds to bear upon a case. There are few things in human life which are generally considered more precious than health, and there are few calamities which, in the minds of most persons, it is more desirable to postpone than death. It is, therefore, a singular anomaly that conferences on matters of far less importance than those relating to health and life, such as business interests, politics, social life, etc., are more frequent than medical consultations. In cases of disease, these are frequently delayed until the condition of the patient is hopeless, and when no real benefit can possibly be derived from them. Not only should they be had earlier, but they should not be limited to cases in which there is more or less immediate danger. The fact that they are apt to be thus limited renders them a source of apprehension to patients, and, for this reason, they are sometimes delayed."

SECS. 3, 4 and 5.—The rules given in these three Sections relate to the etiquette to be observed in consultations. Dr. Flint's comments, of five pages, on these Sections are well worthy of careful study, and show how important it is, in a system of medical morals, to set down rules of etiquette as well as of ethics.

SEC. 6—was accidentally omitted in Dr. Flint's book, but is commented on with Sections 3, 4 and 5.

SECS. 8 and 9.—After a very judicial commentary on the eighth and ninth sections, Dr. Flint adds: "There are some points relating to the ethics and etiquette of consultations which are not touched upon in the Code. One of these is the duty of a consulting physician who may be asked to take the place of the attending physician in a case while it is in progress. It may happen that there is dissatisfaction with the services of the attending physician, of which the consulting physician may not have been aware, and it is proposed that the former relinquish the case into the hands of the latter. This transfer of a case is justifiable on but one ground -namely, that it is in accordance with the wishes of the attending physician. The consulting physician should satisfy himself on this score. It is not enough that the attending physician consent. He will, of course, do so if requested. If not in accordance with his wishes, the transfer should be positively declined by the consulting physician.

"Another point relates to subsequent attendance by the consulting physician. After a case is ended, in another illness the patient may request his servics as attending physician. There may be exceptional instances, but, as a rule, such a request should be declined. If acceded to, it should be after a full understanding with the physician previously in attendance. This and the preceding rule are essential, in order that consultations may be held without risk of injury to the feelings and interests of the attending physicians. A physician in consultation, if actuated by proper delicacy and a sense of honor, will, of course, sedulously guard against the possibility of his services being preferred to those of the attending physician.

"Another point may be referred to. It sometimes happens that a change of an attending physician is made while another physician is associated in consultation. Shall the latter remain in consultation with the successor of the former? As a rule certainly not. If the change has been made on account of dissatisfaction with the medical treatment, the consulting physician is as responsible for this as the attending physician, and he should decline to remain in consultation. If other reasons have led to the change, there are obligations of courtesy which are not to be ignored. There should be a full understanding with the attending physician who is superseded. The 'good of the patient' is, of course, a primary consideration. The action must be determined by the circumstances proper to each case.

"There may be circumstances which should properly lead a consulting physician to decline further association with an attending physician, although no disagreement in consultation had occurred. If the attending physician fail to carry out measures agreed upon, either intentionally or from inefficiency, it is not just for the consulting physician to be held to an equal responsibility in the case. It is the duty of an attending physician to carry out faithfully the course of treatment decided upon, and, if he persistently fail in so doing, the consulting physician is justified in declining to be longer associated with him."

Not a word can, with propriety or consistency, be retrenched from Article IV relating to the ethics and etiquette of consultations.

ARTICLE V.—*Duties of Physicians in Cases of Interference.*

SECTIONS 1 TO 8 AND SECTION 10.—The two extracts made from the commentaries on these Sections will suffice to show their import:

"The foregoing Sections of the Code embrace points in ethics and etiquette, the propriety and importance of which no member of the medical profession will undertake to deny. Their observance is essential to the harmony, good fellowship and mutual coöperation of practitioners of medicine, thereby contributing to the honorable character of the profession, to the public confidence in regard to it, and to its usefulness in the cause of humanity. The question, however, may be raised, Is it necessary to embody these points in ethics and etiquette in formal rules; that is, would not physicians regulate their conduct equally well without the latter? The affirmative answer to this question would imply that all those admitted to the ranks of the medical profession found 'their expectations of practice upon the extent of their qualifications and not on intrigue or artifice.' No one will venture to claim for all members of the profession that purity and high moral tone which are implied in the affirmative answer to the question. It must be admitted that these rules are not infrequently violated. Does it follow that the rules are useless? Certainly not. The fact only proves that knowledge of rules does not always secure their observance. This is true, not alone in medical ethics, but in theology, law and every department of morals. That prescribed rules of medical ethics influence more or less the conduct of physicians can not be doubted. This is true as regards other duties, else wherefore the propriety of such rules applied, not only to the higher moral relations of human life, but to those of minor importance, and even the trivialities of social intercourse. To do away with ethical rules for the reason that they are not always observed would be in opposition to human experience and conducive to anarchy. Prescribed rules of conduct are of use by giving distinctness and force to popular sentiment. Moreover, the knowledge of rules affects the conduct of those who, not devoid of rectitude, pursue the wrong because they do not know the right. Rules thus tend to nullify the temptations and the specious pleadings of apparent self-interest.

"It has been argued for the inutility of rules in medical ethics, that penalties for their non-observance are with difficulty instituted and enforced. This argument is as illogical as in its application to all moral duties. It is a feature of the Code of Medical Ethics that it takes no cognizance of penalties for violations of its requirements. It appeals solely to the judgment and conscience. Measures for the enforcement of its rules are left entirely to the discretion of local associations. . . . . "

SEC. 9—is commented on by the author with the same judicial ability as the other Sections of this and all of the Articles of the Code.

ARTICLE VI.—*Of Differences Between Physicians.*

SECTIONS 1 AND 2.—The following, among the comments on these two Sections, are well worthy of reproduction in this place to refresh, in the minds of physicians, the salutary maxims set forth in this part of the Code and in the commentaries:

"Harmony among physicians is most desirable, not alone for the comfort of those concerned, but as conducive to the honor and usefulness of the medical profession. It is essential to coöperation in medical consultations, in measures for public health, etc. For the maintenance of harmonious relations, local associations are important. In places of small or moderate size, these associations should embrace all the members of the profession of the community who are in good standing. In this way are avoided the evils of cliques, which are to be deprecated. The local associations should have more or less of a social character. They afford opportunities for intimate acquaintance, for the explanation of misunderstandings and for their prompt adjustment. Observation will show that, in the places in which such associations exist, much more harmony and good fellowship prevail than in places in which physicians are not brought together in social intercourse. Controversies and contentions, however, can not always be avoided. They will be terminated with the more difficulty the longer they continue. The Code of Ethics, therefore, judiciously instructs that, if not terminated immediately, they are to be adjusted by arbitration. . . . . "

ARTICLE VII.—*Of Pecuniary Acknowledgments.*

SECTION 1.—This short but important article receives a full commentary of a character such as could have been given only by a physician of the long and extensive experience of the venerable author. The following extracts give some idea of the nature of the comments: "By no process of distortion can this Article of the Code be made to inculcate a combination, after the manner of trades unions, to establish and enforce a certain rate of wages for medical services. . . . . It is plainly important, for the convenience of patients, that in every community there should be an understanding as to the customary fees for the different kinds of service which medical men are expected to render. . . . . Exclusive of exceptional instances, . . . . the adoption of some general rules, and their recognition within and without the profession, obviate the necessity of questions, explanations, and discussions, which are often embarrassing and disagreeable."

"The poor policy of under-bidding other physicians, for the sake of gaining practice, would probably deter those from pursuing it who might be so inclined. . . . Few patients are disposed to select a medical adviser because he places a low pecuniary valuation on his services. . . . . The Code by no means interdicts deviations from the general rules according to varying circumstances. It is to the honor of the profession that the circumstances are few in which efforts for the relief of suffering and the preservation of life are withheld on account of the inability to make an adequate pecuniary acknowledgment. The circumstances which lead physicians from sympathy to deviate from the general rules are often not apparent to others. Few persons outside of the medical profession are aware of the extent to which the services of its members are freely rendered, with but little or no compensation; hence, one reason for an exaggerated estimate of the incomes of those largely engaged in practice, and for the fact that the majority of practitioners, after a long professional career, leave but little property. . . . ."

"Extraordinary services rightfully claim deviations from the general rules in respect of fees. Detentions or constant attendance, involving sacrifice of interests, unusual fatigue, or impairment of comfort, and visits requiring traveling and absence from home, are in this category. No one but the physician himself can place a valuation on such services, and it is his right to do this, provided there be an understanding before the services are rendered."

## CHAPTER III.

### OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ARTICLE 1.—*Duties of the Profession to the Public.*

SECTIONS 1, 2 AND 3.—The commentaries on the several Articles and Sections of this chapter are of the same high order as those of the first and second chapters. They appeal to the noblest sentiments of the ideal physician and sanitarian; they point out most distinctly the reciprocal relations and duties of the profession and public; and they expose the fallacious reasoning of those who assert that the public has nothing to do with, and should neither know of, nor care about, the laws governing the conduct of physicians. The following extracts from the comments on the first three Sections of Article 1 will serve to exemplify their tone:

"The more physicians are led to regard medicine in its humane and noble aspects, the more they are reconciled to its hardships, and the more they are incited to do all in their power to maintain its character and usefulness. The feeling that honor is reflected by membership of a profession which professes to be governed by the Code of Medical Ethics conduces to a high moral tone, and it is in this way that the Code is of great service. It is a beautiful feature of the Code that it aims solely at the influence of its ethical rules on the mind irrespective of any penalties. It is based on the principle that moral rectitude is promoted more by fostering upright sentiments than by the punishment of offenses.

"The profession is entitled to whatever of praise belongs to courage in the performance of professional duty, albeit the courage has no recompense beyond the satisfaction of having followed the dictates of duty. The physicians' roll of honor is the list of those who have died in the performance of professional duty. The history of every epidemic disease furnishes such a list. The risk of life was simply a duty, but who will refuse to accord to it nobleness? Who would remove from the Code that portion which enjoins upon physicians that, when pestilence prevails, 'it is their duty to face the danger, and to continue their labor for the alleviation of suffering, even at the jeopardy of their own lives?'

"A broad distinction, in respect of pecuniary acknowledgments, exists between the duties which every physician owes to the public in behalf of matters embraced in preventive medicine and the duties connected with legal administration of justice. Whenever called upon by legally constituted authorities to give advice or expert testimony at coroners' inquests or in courts of justice, in relation to medical questions, physicians should be paid for their services. In view of the services rendered to the public without compensation, for those just referred to there should be adequate pecuniary acknowledgments. Investigations in cases of supposed insanity, of homicide by poisons or other means, etc., and postmortem examinations, made under instruction by authorities, claim ample remuneration. There is no good reason for physicians being expected to perform these duties gratuitously. Much injustice is often done to the medical profession in regard to these duties. Physicians should not fail, from a sense of delicacy, to assert their rights in this regard, and they should endeavor to lead the public to recognize the propriety of so doing."

SEC. 4.—The commentator treats the subject of this Section with his wonted skill and sound judgment, tells many solemn truths in a simple style, without the least semblance of magisterial assumption, touching the sundry forms of charlatanry and their dupes, and comments briefly, but with energy, upon the evils of proprietary medicines and the no lesser evil effect of physicians' certificates indorsing these and other advertised medicinal agents.

ARTICLE II.—*Obligations of the Public to Physicians.*

SECTION 1.—It is no fault of the public if there still exist many errors respecting the characteristics and moral status of regular physicians and the nature of the professional relations they bear to individuals and to the community, for, little if any information thereon has appeared in lay magazines. The time seems to have come to furnish the American people with this much needed information which they have every right to demand of the profession; and until it is given, the people will likely continue to look upon the regular profession as illiberal and unprogressive, and upon medicine as kept, by its devotees "for their own selfish ends," in a state of occultation to the great injury of the public.

"A just appreciation of medical qualifications by the public is desirable as an incentive to members of the profession to aim at these, and as a reward for their possession. In these points of view, it is discouraging to the votaries of true science for the assumption of ignorance and empiricism to be successful in obtaining popular distinction. The public can not be expected always to judge correctly between real qualifications and false assumptions. True distinction in medicine, therefore, must be based on the opinions of unbiased medical men.

"The apathy and indifference on the part of the public to medical education is a singular incongruity, in view of the immense importance of well-educated physicians to every community. The interests of medical education are left almost wholly to physicians, whereas these interests concern the public vastly more than the medical profession. If the public could be made to see this subject in a proper light, there would be no lack of accommodations, provisions and appliances for all the departments of medical instruction."

In his concluding remarks the commentator says: "The proposal to write commentaries on our National Code of Ethics may have conveyed to the minds of many an idea of presumption. The writer of the foregoing commentaries indulges the hope that their perusal has not sustained this idea, inasmuch as he has not ventured to take issue with the Code on any important point except one—namely the ground for refusing medical consultations. Nor has he assumed to be an expounder of the Code, but only to supplement comments in conformity with the spirit which pervades it. In fact, a leading motive has been to excite the attention of medical, and, perhaps, also, to the same extent, non-medical readers, to the Code itself. There are many members of the medical profession who have never read the Code with that degree of interest which it claims, and there are some who have never read it. These assertions are based on information obtained by personal inquiries. It is safe to say of the public that not one in a thousand knows anything of its character and provisions."

Finally, the author made, in vain, the following appeal to those who wished to abolish the Code: "The action which substituted a new code for our time-honored National Code of Ethics has brought upon the profession of the State of New York a great disaster. It substituted for harmony, dissension, with all the evils flowing therefrom—evils affecting not only the profession, but communities. Has this result been sufficiently considered? Granting honesty of purpose to those who originated and who have carried on with persistent efforts the movements against the National Code, is it not the part of wisdom to pause and reflect upon these evils? Should not a measure fraught with such consequences command, to say the least, a large majority in its favor? Would it not be becoming in the ardent advocates of the measure to recognize the propriety of some approach to unanimity of opinion, and for this end be content to await the result of a fuller discussion and a longer period of deliberation?"

The appointment, in 1847, by the AMERICAN MEDICAL ASSOCIATION, of a committee of wise and learned men to frame a code which might serve as a guide for professional conduct, was a boon to the profession and to the public. This committee consisted of Drs. Isaac Hays, Emerson and Bell of Pennsylvania; Dr. Alonzo Clark of New York, and Dr. Arnold of Georgia, who, after examining many codes of medical ethics, adopted by local societies, and finding that they bore a close resemblance to each other and that they were derived from Percival's code, abbreviated the English code and adapted it to the use of the American medical profession. The adoption of this code has had the much desired effect of raising the standard of medical morals and thought in the United States. Those least familiar with its provisions are its worst detractors who wish to destroy this monument of wisdom and justice which, with Dr. Flint's commentaries, is worthy of being translated into every foreign language, and of being published in every newspaper in the world, in order that all men, who can read, may know what scientific medicine means, and what are the reciprocal obligations of physicians and the public. This would operate more effectively than anything else toward the extinction of medical charlatanism and of the many kinds of irregularities practiced under the guise of benefiting humanity.

## NECROLOGY.

**Dr. T. J. Fentress** of Princess Anne County, Maryland.

**Dr. Lucius F. Billings,** for nearly fifty years in medical practice in Barre, Mass., recently died at the age of 72 years.

**Dr. D. V. Durand** died at his home at Newington Junction, Conn., December 5. Dr. Durand has lived in this place about fifteen or twenty years.

**Dr. James S. Conover,** aged 45, died at Red Bank, N. J., of Bright's disease. He was a well-known practitioner throughout the country. He leaves a widow.

**Dr. John Robbins** of Norridgwock, Me., died at his home November 29, after a long illness, aged about 70 years. He has been a member of the Maine Legislature and a member of the United States Examining Board of Pension Physicians.

**Dr. N. G. H. Pulsifer** of Waterville, Me., died December 2 of pneumonia, aged 69 years. He had been in practice forty-one years. He was for many years President of the People's National Bank and an active Republican. He leaves a widow, two sons, who are physicians, and two daughters.

**Dr. William Notson** died at Philadelphia on December 9, aged 87 years. He was one of the oldest practicing physicians in Philadelphia, and was a native of that city and a graduate of Jefferson Medical College, class of 1832. When the cholera was prevalent Dr. Notson was District Physician of Southwark, and during the last yellow fever epidemic rendered valuable assistance in the same district. Three married daughters survive him. The late Major William M. Notson, of the United States Army, one of the Surgeons who made the autopsy on the body of President Lincoln, and the late Charles B. Notson a leading druggist of St. Louis, Mo., were his sons.

**Dr. Joseph H. Baker,** one of the most eminent physicians of Lafayette, Ind., was run down by a locomotive three miles south of Lafayette Saturday, December 6. The base of the skull was fractured and he died one hour afterward. He was in the neighborhood of thirty-seven, and was giving his attention to gynecology as a specialty. His father, Dr. Moses Baker, died several years ago, being at the time of his death one of Indiana's most eminent surgeons. He made the second Cæsarean section ever made in America. Dr. Joseph Baker was a man of sterling worth and upright moral and Christian character. He graduated at Jefferson Medical College in 1877, and commenced practice with his father at Stockwell, Ind. Desiring to give his attention to the surgery and diseases of women, he removed to Lafayette less than a year ago. At the time of his death he was President of the Tippecanoe County Medical Society, and a consistent and active member of Trinity M. E. Church. Ten years ago he married Miss Belle Miller, who survives him, with a son 9 years old.

**Dr. William F. Hutchinson.** At a meeting of the Executive Council of the American Electro-Therapeutic Association, the following resolutions on the death of Dr. William F. Hutchinson of Providence, R. I., were unanimously adopted:

WHEREAS, It becomes our painful duty to announce the death of Dr. William F. Hutchinson, one of the Foundation Fellows of the American Electro-Therapeutic Association, as well as the First Vice-President of the same; and

WHEREAS, In his death we lose a warm and faithful friend, a valued associate and an accomplished member of the profession; therefore be it

*Resolved*, That this Association desires to place on record its appreciation of his genial spirit, his active coöperation in the work of the Association, and of his deep interest in the scientific questions relative to his chosen profession.

*Resolved*, That we express our sincere regret and heartfelt sorrow at his death.

*Resolved*, That we tender to his sorrowing family an expression of our profound sympathy in their great loss.

*Resolved*, That a copy of these resolutions be sent to the bereaved family, to the medical journals and that they be spread upon the minutes of the Association.

Augustin H. Goelet, M.D.
W. J. Morton, M.D.
G. Betton Massey, M.D.
Robert Newman, M.D.
Charles R. Dickson, M.D.
} Executive Council.

WM. J. HERDMAN, M.D., President.
MARGARET A. CLEAVES, M.D., Secretary.
New York, N. Y., Dec. 13, 1893.

**Dr. Joseph B. Browning** died December 10 at St. Joseph, Mo., where he had gone several weeks ago for medical treatment. The immediate cause of his death was pneumonia. Dr. Browning was about forty-five years old. He was born in New York, and came to Kansas City from Central Illinois in 1882. For several years he was editor-in-chief of the *Medical Index*. During the same time he practiced the profession of medicine and was Professor of Diseases of the Nerves in the University Medical School of Kansas City. Of late years he had abandoned his profession of medicine and had devoted himself to teaching. For four years he was Professor of Ancient Languages in the Kansas City High School. He had been in poor health for some time, and one year ago resigned his position and went to Michigan, hoping that rest and change of climate would help him. He returned here in June apparently better, and was reëlected to his place in the schools, but resigned and went to Mexico before the fall term began. He returned from Mexico about five weeks ago and immediately went to St. Joseph, where he entered a sanitarium. Dr. Browning was one of the most accomplished scholars in the city. He was a graduate of Harvard College and Rush Medical College. He traveled in Europe ten years studying medicine and languages. He devoted several years to the study of medicine in Vienna and Paris, and in the latter place was a student under the celebrated Charcot. He was a splendid linguist, being master of French, German, Spanish and Italian, as well as the ancient languages. He was one of the best Greek scholars in the country, and one year ago was tendered the Greek chair in the Chicago University. He declined the offer on account of his health.

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This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, DECEMBER 23, 1893.

## VIVISECTION.

Persons who take extreme views of questions are said to have their uses. They present their side of the question with a terse vigor which compels attention to their ideas. This has its advantages, because, like rocks in the bed of a stream, they serve to stir up the current of thought and prevent its running on with too great uniformity and also prevent the possibility of stagnation. But, they are rarely, if ever, right. They build a Chinese wall of exclusiveness and positivism about themselves and refuse to listen to the evidence of others. This seems to be especially true of the Antivivisection Society and their methods and exhibit at the World's Fair, together with their so-called arguments, better termed indefensible statements and unjustifiable inferences relative to the cruelty and barbarous practices of vivisectionists, and its want of gain to the profession and the world. One of the editors of one of our best daily papers, in a recent article says: "No physician or surgeon maintains that any appreciable gain in the art of healing has yet been made by vivisection." He further says: "For my own part, I am more than willing to forego, as to myself and those dear to me, any possible prolongation of life, and any relief of its ills, which might come from the fiendish, debasing, shameful practice of inflicting on lower animals, pangs to which those of the rack, the boot, the thumbscrew, and even the stake itself could show no parallel." "Life and ease are not worth the having at such a price."

Before discussing the question of vivisection, let us first remind him that, as was long since so forcibly pointed out by DR. TONER of Washington: "*The assumption that any one has the right to neglect his own health at pleasure, is false in morals, and equally in opposition to social and statutory laws.*"

To decide this question rationally, we should ask, and answer, the following questions:

What is vivisection? How is it performed? What has been gained by it? Before defining vivisection, we should carefully distinguish between vivisection, and "cruelty to animals," as recognized by the law. Vivisection literally means the dissection of living animals, but is a term usually employed to denote all those operations or experiments on living animals or organisms for the purpose of physiologic investigation. Every operation on the living human body is a vivisection. Every operation on the lower animals, whether a cutting operation, the injection of a drug to study its physiologic operation, the injection of, or inoculation or vaccination with any germ or its product is a vivisection. The slaughter of animals for food and the destruction of other useless harmful animals or organisms, is a vivisection. Every investigation in bacteriology which involves the destruction of microörganisms is a vivisection. Either this, or else we must accept the other horn of the dilemma and say that consciousness has its seat in the cerebrum. Our reply to this is that if this is true, then all those organisms devoid of a cerebrum are incapable of feeling pain, and, therefore all experiments upon them are not cruel, and cause no pain.

There are but three States in the Union in which the statutes contain any reference to vivisection. These are New York, New Jersey and California. The law of New York is as follows:

"If any person shall torture, torment, deprive of necessary substance, or needlessly mutilate or kill, or cause or procure the same to be done, to any living creature, every such offender shall, for every such offence be guilty of a misdemeanor.' 'Then follows this Section in regard to vivisection:

"Nothing in this Act contained shall be construed to prohibit, or interfere with, any properly conducted scientific experiments or investigations, which experiments or investigations shall be performed only under the authority of the faculty of some regularly incorporated medical college or university of the State of New York."

In New Jersey and California, the laws are similar. Nearly all the other States have laws in regard to cruelty to animals.

Thus vivisection is lawful under the authority mentioned, and when "properly conducted."

This brings us to the question, How is vivisection performed? Under all circumstances when mutilation and cutting is resorted to, anesthetics are used.

Where drugs are given for the purpose of studying their physiologic effects, and where the germs of disease are used to vaccinate or to inoculate the animal, anesthetics are not employed. The physiologist and physician is not a fiend incarnate, delighting to revel in blood and torture, as the antivivisectionist would have us believe.

Let us now consider the third question: What are the results of vivisection? What is the gain to humanity? Leaving out the question of the slaughter of animals for food, and the destruction of useless or harmful animals and organisms, we have the following:

Vivisection made possible the discovery of the circulation of the blood, this being the most important discovery in the whole range of biologic science, and without the knowledge of which, physiology would have advanced but little; the old theory of humoral pathology could never have been replaced by the modern, rational theory of cellular pathology of VIRCHOW; the physiologic action of drugs would have been a matter of empiricism, and rational therapeutics impossible.

Vaccination next attracts our attention. This is one of the crowning triumphs of vivisection. The first, and all subsequent vaccinations were vivisections, and the preparation of every "point" of non-humanized vaccine virus is the result of a vivisection on one of the lower animals. The most remarkable vivisection of modern times was conducted at Milton, Mass., in the year 1809. Twelve children were vaccinated, and afterward taken to a hospital and inoculated with smallpox. They were quarantined at the hospital from July until October, and not one of them was affected by the inoculation of the smallpox virus. The committee in its report says, after speaking of the efficacy of vaccination: "That it is a blessing as great as it is singular in its kind, whereby the hearts of men should be elevated in praise to the Almighty Giver."

It remained for DR. CORY of England, to prove by a vivisection upon himself, that syphilis may be transmitted with the vaccine virus, thus proving the advisability of using only the bovine virus Against the use of the bovine virus it is urged that the heifer is prone to tuberculosis, but she is immune against syphilis, and it *has never been proved that tuberculosis has been transmitted by vaccination*. It is estimated that at the present time, there are twenty millions of people vaccinated annually, and that the death rate per thousand from smallpox is only one-twentieth what it was before vaccination was introduced.

And yet, the antivivisectionists, while denying the beneficent results of vivisection, and while claiming to be willing to forego any benefits to be derived from it, are loud in their insistence on having vaccination performed, and that their children be vaccinated with bovine virus.

The great progress made in the surgery of the brain, by means of which much knowledge has been gained, suffering averted and lives saved, has been made possible by vivisections upon dogs and monkeys and by operations on the human being.

The same is true of abdominal surgery, where it was shown by PARKES, as the result of operations upon dogs, that wounds of the intestine are operable, and by SENN that by means of the hydrogen test we may know whether the intestine is perforated or not.

Hydrophobia has been robbed of its terrors, chicken cholera and anthrax lessened in virulence and mortality, and our knowledge of the etiology of all the germ diseases greatly increased; the cause of sepsis made known and the advantages of asepsis demonstrated beyond the question of doubt; and lastly, the most important question which can concern the human mind in a physical way, the question of immunity has been raised, much knowledge obtained and with a fair prospect that it will sometime be answered, thus lessening human suffering, preventing disease and lengthening the average of human life. The antivivisectionist says he is willing to forego these benefits and advantages. We are still thoughtless enough to believe that vivisection is a necessary part of the medical college curriculum.

Vivisection is a part of the law of nature. The greatest good of the greatest number of the highest order of animals, demands the sacrifice of the comfort or even the life of those of the lower orders of animals and organisms, whether it be that they are useless or harmful, that they are needed as food or that they may be so utilized as to aid in teaching or learning truths which enable us to cure disease, lessen suffering or prolong life. It is one of the inexorable, immutable laws of our existence, the "survival of the fittest." This maudlin sentimentalism and antivivisection anguish over the sufferings of these creatures affects neither the law nor the results. It is regrettable that men well qualified to discuss other subjects, men of ability and influence in other lines of human thought, should thus attack a subject in such manner as to show either a lamentable want of knowledge of the subject, or else that they are willing to sacrifice truth to either sentiment, prejudice or ambition.

The benefits from vivisection have cost pain and blood and even the life of some of the lower animals, and yet we believe that it is better that any number of frogs and worthless curs should be sacrificed on the altar of science than that one innocent babe should suffer an untimely, preventable death. Not that we love animals less, but humanity more.

## SMALLPOX.

The health officers of the country are much exercised over the prevalence of smallpox. For a number of years there has not been many cases, and as a necessary consequence there are a great many persons unprotected by vaccination. The two most noted outbreaks that have occurred during the last six months are those of Muncie, Ind., and Reading,

Pa., the result of mistaken diagnosis, and municipal neglect. To these two localities and the mildness of the disease may be attributed nearly all the other cases. The most marked features with regard to both cities was the low death rate; in fact it may be said the mortality was lower than any recorded. In a few instances the disease was contracted from immigrants, but owing to the great care exercised by the Marine Hospital Inspectors at foreign ports since May and at the ports of entrance, there were fewer cases from this source than have occurred for many years, and then only when the disease was not prevalent in Europe, in the countries from whence the bulk of immigrants come.

More cases of smallpox have been reported in the city of Chicago during the past month than for the same time for the last two years. The control of the disease since 1883 has been very effective, and there have been years when not a single death occurred. This immunity from the disease resulted in neglect of vaccination, which with the great increase of population and of visitors to the World's Fair, are no doubt the cause of the present increase. It is fortunate that this increase did not occur during the Exposition, as if it had smallpox would have been distributed throughout the United States. So far we have only learned of one instance in which a visitor contracted the disease, from which the group of cases near Mascoutah, Ill., resulted. Every effort is being made to control the disease.

Cases have recently been reported in Illinois, Indiana, Ohio, West Virginia, Tennessee, Pennsylvania, New Jersey, New York and Massachusetts. Opposition to vaccination is occasionally noted. Some of the negroes of West Virginia and Tennessee became alarmed, having conceived the idea that vaccination would kill them. This feeling, however, soon disappeared in localities where it existed. In Ohio a religious sect called the Amish, are opposed to vaccination for the reason that it is an attempt to interfere with Providence. An Anti-vaccination Convention was called to meet at Indianapolis in December 20, but so far we have seen no account of the meeting. This is the first attempt of this character in this country, and is no doubt the result of the effort now being made to secure the vaccinal protection of all. Fortunately there is but little opposition to vaccination in the United States.

Smallpox was found last week in an almshouse in Massachusetts and a jail in New York. Why not vaccinate all tramps and inmates of public institutions and also the temporary recipients of charity? In this way much of the floating population would be protected, and thus prevented from spreading the infection. On December 14 three cases of parties indicted for resisting the enforcement of vaccination were found guilty at Reading, Pa. Sentence was deferred. This is probably the first time in this country that a suit of this character has been brought.

The Ohio State Board of Health has issued an order that no pupils should be admitted to the public schools unless protected by vaccination, and on the 14th inst., the New York Board of Health made vaccination compulsory. It is clearly the duty of all medical men to encourage vaccination and to promptly report all and even suspicious cases that come under their observation to the health authorities. Prompt isolation, vaccination and re-vaccination of all exposed, and the thorough disinfection of the surroundings is the only way to control the contagion.

## CHOLERA.

Cholera is still prevailing at Constantinople, and the expert who was sent from Paris at the request of the Sultan to assist in controlling the epidemic has died. Deaths still occur in the Island of Teneriffe. This outbreak was caused by the Italian steamer that had cholera on board and was not allowed to land at Rio Janeiro. Upon her return she stopped at the Island for water and provisions. What recompense can this steamship company make to these unfortunate people? More care should have been taken at Genoa before the steamer started. Salonica in Spain is the latest point where cholera is reported.

## SHOULD AN EXCEPTION BE MADE AS TO ERGOT?

The New Jersey State Board of Medical Examiners have authority to regulate the practice of midwives in that State. Among their regulations is the following:

"That you shall not prescribe, advise or give any drug or medicine, or other agency—excepting possibly *some preparation of ergot* which, however, must never be given before the birth of the head of the infant or a cathartic on the second or third day after delivery—to a lying-in-woman or to the infant, or to any other person or persons, under penalty of not only losing this license but also of prosecution under this Midwifery Law as well as under the Medical Law of 1890."

The possible exception of some form of ergot will, we judge, be a hazardous experiment with the midwives of New Jersey unless they are much better than those found elsewhere. If those midwives may be intrusted with ergot, why not let them have the right to use opiates and "soothing syrups" containing morphia?

## HIGHER MEDICAL EDUCATION.

We noticed last week in our news columns that Rush Medical College of Chicago, had decided to require a four years' course from students matriculating from and after 1894. This school has heretofore enacted that its annual courses should consist of eight months, so

that hereafter students must attend four full courses of eight months each as preliminary to graduation.

This advance in medical education will alike gratify the members of the AMERICAN MEDICAL ASSOCIATION, the Alumni of the College, and friends of higher medical education everywhere.

### OPINION EVIDENCE BASED ON CONDITION OF BROKEN BONES.

A somewhat novel application of the rules governing the admissibility of expert testimony, arose in a case where a man was injured by what was claimed to be the negligent condition of the landing place under a fire escape. A surgeon, presumably having a knowledge of the anatomy of the human body, the strength and position of the bones of the leg, not common to laymen, and having the advantage of a personal examination of a leg after it has been injured, is properly entitled to give his opinion as an expert, holds the General Term of the Supreme Court of New York in the case of Johnson v. Steam-Gauge & Lantern Co., decided Oct. 20, 1893, that, judging from the condition of the broken bones, the foot of the broken leg struck upon a sloping object and that the heel of the foot struck the object first, before the ball of the foot struck, and that the body of the person was in an upright position when he fell.

### REQUIRING PRODUCTION OF PRESCRIPTIONS BEFORE GRAND JURIES.

A law which provides that druggists shall carefully preserve all prescriptions compounded by them or those in their employ; numbering, dating and filing them in the order in which they are compounded, and shall produce the same in court or before any grand jury whenever thereto lawfully required, and on failing, neglecting or refusing so to do shall be deemed to be guilty of a misdemeanor and on conviction shall be punished by a fine, the Supreme Court of Missouri for the second time pronounced constitutional in the case of State v. Davis, decided Nov. 9, 1893. But what is of even more interest, is the holding that under such a statute druggists can not be required to produce all of the prescriptions compounded by them or filed by them during any specified length of time, however short, to be inspected and inquired into by the grand jury, no matter what ailments they may have been prescribed for, or for whom, as that would be an intrusion upon their private affairs and business, and without warrant of law. A subpœna to compel the production of prescriptions, even in a proper case, should describe them with some kind of particularity.

Blank Applications for membership in the ASSOCIATION, at the JOURNAL office.

## ASSOCIATION NEWS.

**Arrangements** are being made by the JOURNAL for an ASSOCIATION train from Chicago to San Francisco. Details will be published later.

**Section on Dermatology.**—We regret that repeated search has not enabled us to find the papers relating to the Section on Dermatology, among the other papers of the ASSOCIATION. Gentlemen who contributed to this Section at the Milwaukee meeting having duplicates of their papers, or abstracts of them, are respectfully requested to forward them to the JOURNAL without delay.

**The American Medical Association.**—After a lapse of twenty-four years the AMERICAN MEDICAL ASSOCIATION will again honor San Francisco with its annual meeting next June.

The attendance from the Eastern States will no doubt be many times larger than at the former meeting. The medical profession of this Northwest region should unite with our California brethren so that our visitors will feel that they are being welcomed by the physicians of the whole Pacific coast.

We can show our interest in the ASSOCIATION by becoming members in advance of the coming meeting, and then our greeting to our brothers from across the continent will be more cordial for we will feel that we have a double interest in them.

Any member in good and regular standing of any State or county society can become a member of the AMERICAN MEDICAL ASSOCIATION by application to the treasurer, accompanied by a certificate from his local society.

Each member will receive the JOURNAL OF THE ASSOCIATION, which the trustees aim to make the best medical weekly in the country.

Application blanks may be obtained by sending address to Dr. J. B. Eagleson, Burke Building, Seattle, Wash.—*Medical Sentinel*, Portland, Oregon.

**Change of Date of Meeting—Official Notice.**—The following notice appears in the ASSOCIATION JOURNAL over the signatures of the President and Secretary: "In order to enable the State Medical Societies to send instructions as to their action in the matter referred to them by the AMERICAN MEDICAL ASSOCIATION at its recent meeting at Milwaukee, and for other reasons, the time of meeting of the ASSOCIATION at San Francisco has been changed from the first Tuesday in May to the first Tuesday in June, 1894." As we have already stated, a change in the date of the meeting had been urged, but it was supposed that this would still be in May. The date now announced is rather later than we would have selected for seeing California to advantage. Unless the season be a late one the green refreshing garb of spring will have faded to the sunburnt tints of our rainless summer, and in the interior hot days may be encountered. Sacramento, however, will be looking her very best, for in no month more than in "the month of roses" does the Capital show to such advantage. As for San Francisco, the months or seasons make no difference there. The climate, or rather weather, is much the same at all times. It is a good, hard working vigorous and stimulating atmosphere; but more than this it would not be truthful to state.—*Occidental Medical Times.*

## SOCIETY NEWS.

### THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS, ROME, MARCH 29—APRIL 5, 1894.

ROME, Nov. 16, 1893.

*My Dear Sir and Esteemed Colleague:*—I have the honor to inform you, that the Executive Committee, in its session of the 12th inst., has established, that the XI International Medical Congress, which had been postponed by deliberation of the 2d August, 1893, until April, 1894, shall take place in Rome from the 29th March until the 5th April, 1894

The Committee is very glad to have been able to satisfy thus the wish of the majority of those foreign colleagues, who had been requested to give their opinion on this purpose.

Having thus had the pleasure to give you officially this information, I beg your leave to request you to render it public in the manner which you will judge best for the interest of the meeting; and to ascertain in the meanwhile the number of colleagues of your country, who will attend in consequence of the steps taken by the Committee; for each of them convenient accommodation at usual prices will be provided.

The circumstances beyond our control, which had forced us to postpone the meeting, existing no more, the organizing action for the Congress enters on a period of renewed activity, and the Organizing Committee flatters itself to find you, my dear sir, as well as the colleagues of your country, its zealous collaborators, now and in the future, as you have been, with so much success, for the past.

Yours faithfully,

PROF. E. MARAGLIANO, M.D., Sec'y General.

To Augustus P. Clarke, A.M., M.D.,
Cambridge, Mass., U.S.A.

In consequence of the adjournment of the Congress, the Articles 1 and 2 of the statute have been altered as follows:

ARTICLE 1. The XI International Medical Congress will be inaugurated in Rome on the 29th March, 1894, and will close on the next following 5th April.

ART. 2. Papers to be read before the Congress should be announced not later than the 31st January, 1894. The title should be accompanied by a very short précis of the paper and by the conclusions; the latter will be printed by care of the Board and distributed among the members.

Papers announced after the 31st August, 1893, will be marked in the provisional program with an asterisk.

The provisional program will contain also those previously announced papers, which have been published in scientific papers after the adjournment.

The railway companies have established, that the reduction of fares should be available from the 1st of March till the 30th of April, 1894.

The traveling tickets of membership and railway passes will be sent by the Secretary General's office to each member enrolled before the 14th of February, 1894.

After this date the said papers should be applied for to the following gentlemen:

In Austria to Prof. H. Nothnagel, Vienna.
In Belgium to Prof. Thiry, Bruxelles.
In Bulgaria to Dr. A. Puscoullieff, Sophia.
In Denmark to Prof. C. Lange, Copenhagen.
In Egypt to Dr. Hassan Pacha Mahmoud, Cario.
In Egypt to Dr. Onofrio Abbate Pacha, Cairo.
In France to Dr. Marcel Baudoin, Paris.
In Germany to Dr. Carl Posner, Berlin.
In Great Britain to Dr. G. H. Makins, London.
In Great Britain to Dr. G. A. Gibson, Edinburgh.
In Great Britain to Prof. Sir William Stokes, Dublin.
In Luxemburg to Dr. Paul Koch, Luxemburg.
In Malta to Dr. G. O. Galea, La Valletta.
In Norway to Prof. S. Laache, Christiania.
In Netherland to Prof. B. I. Stokvis, Amsterdam.
In Poland to Prof. Cybulski, Krakau.
In Portugal to Prof. J. T. de Sousa Martins, Lisbon.
In Roumania to Dr. C. D. Severeanu, Bucarest.
In Russia to Prof. V. Pachoutine, St. Petersburg.
In Servia to Dr. V. Subboticz, Belgrade.
In Spain to Prof. J. Calleja y Sanchez, Madrid.
In Spain to Dr. A. Espina y Capo, Madrid.
In Sweden to Prof. F. Holmgren, Upsala.
In Switzerland to Prof. Th. Kocher, Bern.
In Switzerland to Prof. D'Espine, Geneva.
In Turkey to Dr. van Millingen, Constantinople.
In Turkey to Dr. H. Perera, Salonik.
In Hungary to Dr. L. Csatàry de Csatàr, Buda-Pesth.
In Tunis to Dr. C. Funaro, Tunis.

The first edition of the provisional program is to be printed and will contain details concerning the Congress, and a list of all the papers announced till Nov. 15, 1893.

It should be well to remember the following Articles of the statute:

ARTICLE 2. All physicians are admitted to have a part in the work of the Congress, provided they have satisfied the conditions of inscription, and obtained the required ticket of membership.

ART. 3. The doctors of other sciences who, for their special studies, should have an interest in the work of the Congress may be enrolled with the duties and rights of the members of the Congress who are doctors of medicine, being entitled to partake in the work, either by reading papers or by having a part in the discussion.

ART. 4. The admission fee to the Congress is fixed at twenty-five francs—one pound sterling; it entitles to a copy of the Report of the Congress, which will be forwarded to the members as soon as it is published.

ART. 17. The persons who, not being comprised in the Article 3, are interested in the work of a Section, may obtain admission by consent of the President of the Congress.

Such persons will receive a special ticket and will pay the admission fee like the other members, being entitled, however, to a copy of the Report of the Congress.

The persons thus admitted to the Congress may speak neither in the general sittings nor in the sittings of the Sections to which they are not enrolled.

ART. 18. The students of medicine may be invited or admitted by the President to attend the sittings, but only as hearers.

They must obtain a special ticket which will be granted them without payment.

Members may apply to the Secretary General's office for railway passes for their wives and adult members of their families; the latter may be enrolled on payment of a fee of ten francs.

Medical gentlemen and all persons who wish to take part in the Congress are requested to give their names as soon as possible, writing for this purpose to the Secretary General of the XI International Medical Congress, Genoa.

Fees should be paid by post order or draft to the order of the Treasurer, Prof. L. Pagliani, M.D., Director General to the Office of Public Health, Home Department, Rome, Italy.

## College of Physicians of Philadelphia.

SECTION ON ORTHOPEDIC SURGERY.

*Meeting held on November 17, 1893.*

*Concluded from page 944.*

### RESECTION OF A RIB FOR EMPYEMA FOLLOWED BY LATERAL CURVATURE OF THE SPINE.

DR. G. G. DAVIS exhibited a boy in which two ribs had been resected and there was resultant lateral curvature. He showed an apparatus which had been adjusted for the purpose of reducing the projection arising therefrom. The jacket was adjusted so that it made pressure on the pelvis, in the axillary fold, and counter pressure on the opposite side by the pad.

DR. DEFOREST WILLARD—I should like to ask Dr. Davis whether I understood him to say that the deformity would probably grow worse as time goes on? My experience is that such deformities tend to improvement. I had occasion a few weeks ago to examine a case upon whom I operated in 1872 for empyema, a girl then five years of age. Suppuration continued for six months and there was great deformity at the time; yet the patient has become absolutely straight and I had difficulty in determining upon which side the operation had been performed. In a number of other cases, the same result has been obtained, and the improvement has been very marked under exercise and expansion of the lung, which probably is the most important element. In regard to the use of apparatus I have to say that I have never seen the deformity following empyema benefited by any form of appliance. I rather look upon it as injurious by interfering with expansion of the lungs. I have always used some form of exercise with marked benefit.

DR. H. AUGUSTUS WILSON—I would like to say that it appears to me that this case has reached the stage in which there are present all the conditions of idiopathic lateral curvature and marked rotation with the usual distortion of the thorax. It is a question whether apparatus does not tend to still further produce muscular atrophy, and whether the chest will not decrease in size, the lateral curvature and rotation becoming more pronounced. The question is not

settled in my mind whether most of the muscular atrophy is produced by scoliosis or by apparatus. This particular apparatus has, in my judgment, one serious objection; the straps passing over the shoulders. The shoulders are brought into line by simple downward pressure, even when there is a crutch resting upon the hips. Mothers will loosen the straps around the waist to give the child comfort and the apparatus is therefore sure to drag still further upon the shoulder straps. The shoulder straps prevent a displacement of the apparatus, even when the lower bands are loose, and therefore they should be dispensed with. It is my experience that apparatus too often only conceals the deformity beneath, but does very little in the way of correction.

DR. T. S. K. MORTON—I do not think I have had a case which improved under apparatus. I have obtained good results from the application of head extension at night with suspension at times during the day. In regard to the use of a bicycle, of which Dr. Taylor speaks, it is a question in my mind whether this is wise, as already we are noticing in literature, reference to a condition of kyphosis to which this kind of exercise gives rise.

DR. J. B. DEAVER—My experience fully accords with Dr. Wilson's. I have operated upon a large number of cases, many of them tuberculous; others resulting from pleurisy. Relative to the lateral curvature which follows, I would say that most cases recover. I advise against appliances under the circumstances; I believe it to be a serious matter to interfere with chest expansion. Ordinary appliances are misleading and, to my mind, do harm, often resulting in paraplegia. If support is required, my plan is to use plaster-of-paris bandage the length of the spine, and at the end of a month I replace it by another and the patient is thus straightened every time the bandage is altered. Those of us who are familiar with Dr. Adams' dissertations, know that he lays great stress upon this point, unless there is actual disease of the vertebral column.

DR. G. G. DAVIS—The deformity in the case shown to-night has been more marked lately than it was a few weeks ago. I do not think that it will increase as time goes on, after sound healing has taken place and the lung begins to expand, but I am of the opinion that an apparatus for the resultant curvature is of marked benefit in the treatment for the condition as now present. Some of the remarks made to-night apply to cases of pure lateral curvature and not to such a condition as that of the case exhibited. Dr. Deaver refers to paraplegia following the use of apparatus. To this I would say that perhaps paraplegia may follow lateral curvature, but I have never seen it as such a result. As to the question of the use of a plaster jacket or brace, that is largely a matter of opinion; I do not think that this question has been definitely settled yet. When we find such men as Bradford of Boston, and others, describing them, one can not regard apparatus as always out of place.

In regard to this special case I do not see that healing would be delayed by an appliance. There is a projection on one side which is quite marked. I can see how expansion would be hindered by having the chest encircled by bandages, but in this jacket there is no constriction of the chest. It is the pelvis which is embraced, and pressure is made over the projecting side and not the constricted one. Dr. Wilson's suggestion in regard to the shoulder straps is a good and practical one, and I will watch the case to see that displacement does not occur. I would not, by any means, urge the continual use of such apparatus, but in the early period of recovery where the sinus has not healed, or just healed, I think it is good treatment; as without it, I I think, in a comparatively short space of time, the deformity becomes more marked. I do not believe in substituting for exercise any mechanical appliance because I think nothing can take its place. Where an apparatus is supported from the hips, and where there is no pressure made on the contracted chest, and when apparatus is capable of removal, if so desired, for exercise, I do not think it would at all hinder the recovery of a case.

DR. W. J. HEARN reported a case of suppuration of knee-joint that he operated upon by free incision and washed out with 1-2000 bichlorid of mercury solution. The patient made a rapid and complete recovery, ultimately obtaining full usefulness of the joint. Dr. Hearn advocated early and free incision for exploratory purposes, because it enabled the surgeon to effectually evacuate the contents of such an abscess, and prevent its rapid destruction of the joint.

DR. J. B. DEAVER opened the discussion.—This case is particularly interesting for the reason that last winter I saw, with Dr. Lloyd, a case of middle ear disease in which there was pronounced sepsis. I opened the abscess and removed pus; this Dr. Abbott examined for micrococci, but without finding such bacilli. I should rather take exception to Dr. Hearn's remarks that he thinks this treatment wise in all cases. I scarcely think that in all cases it would give good results.

DR. T. S. K. MORTON—I hardly agree with Dr. Hearn in advocating the use of so strong a solution as 1-2000 bichlorid of mercury. My experience is, in using antiseptics in joints, that they are a source of danger; that it is not possible to use such a strong solution without producing adhesions. Iodoform appears to me to be the best antiseptic to use; in fact I do not use bichlorid for washing out joints, as I find simple boiled water to be quite effective and without danger of doing harm. In using strong antiseptics there is a possibility of producing synovitis.

DR. R. S. CRUICE—In May, 1892, I saw a case of a girl age 3 years who had a suppurative knee-joint. She had been taken to the University and to the Children's Hospitals and had been told that nothing could be done except to amputate the limb. I opened the joint, passed a probe through to the opposite side and then injected the joint with peroxid of hydrogen twice a day. At the end of thirty days the wound closed and I applied a splint. I did not see the case again until September when the child was running about and appeared perfectly healthy. There was perfect motion in the joint.

## CORRESPONDENCE.

### How to Manage Criminals.

*To the Editor:*—There are symptoms of a "fad" becoming universal in this country. This fad is based on the false conclusion that "crime is a result of disease." Men becoming sober and orderly after taking the so-called Keeley cure is apparent evidence that the vice, drunkenness, can be cured with medicine, and people who believe in this will say, If one vice can be cured by remedies administered to the criminal, why can not others be cured in the same way? Perhaps ere long it will be fashionable and also legal to send the horse-thief and murderer to the hospital instead of the pen and gallows. To enter my objections to this fad is the object of this paper.

In evidence that crime is not a result of disease, I will mention the fact that crimes are not so prevalent among the sick as among the healthy. The hungry man may steal, not because he is sick but because he is hungry. The murderer may slay his fellow-man, not so much because he is sick and seeking relief, but because he is angry and thinks his act justifiable. There is a vast difference between *hunger*, *anger* and *disease*. A sick man may commit crime but this is not proof that the sickness was the cause of the crime. If sickness was a factor in crime, more people would commit crime when sick than when well, but the opposite of this is true.

Nine-tenths of the crimes are committed by people who are healthy. I do not forget that insane people often commit murder and steal, but this is oftener an accident or concomitant than cause of crime. The list of criminals will show a *small* per cent. of insane people. Many criminals plead insanity because (if proved) it will protect them from punishment. That there is a great *majority* of *healthy* criminals goes to show that sickness has little to do with crime. Evil associations and prison-life are not calculated to improve a man's moral character. The object in sending a man to prison is not so much to improve his morals as it is to punish him for crime committed. Schools, good society and religious training assist in the way of morality but these are not a part of the penitentiary code. The fear of punishment is a great factor in preventing crime, but once let the people understand that the penalty for crime is, to be sent to the hospital where they can have good food, good books to read and a general good time, then Texas would not be large enough to hold the hospitals that would be required for the sick. *Kindness* to a criminal is a *premium on crime*. No. Don't

learn too much suddenly. The criminal in this country is getting all he deserves in the way of kindness; perhaps too much. I once heard a noted cow thief say he was going to plead guilty because the county jail in which he was confined was not so comfortable as his old quarters at the "Pen." I heard a returned convict say that the penitentiary at Jefferson City, Mo., was a much preferable place to his county jail.

Philanthropy and charity are well enough in their place, but to treat criminals on the theory that they are only sick people is a dangerous unholy fad, and I hope the medical profession will not assist in promulgating this fraud. The Ruler of the Universe (if the Bible be true) says that the wicked deserve *punishment* and the sick deserve *kindness*. Let us not get the two decrees mixed. Let the criminal stay in his own proper place. Care for the sick as heretofore, but please do not "gush over" in behalf of an undeserving law-breaker. The way to manage a criminal is to punish him for his crimes, and this is the right and only safe way to manage him. To put him on the list of sick people and treat him as such, would impoverish any nation on the globe. Down with the fad that crime is a result of disease. The idea that the human family has become so sick (or good either) that it deserves only charity is dangerous in the extreme. Vice is prevalent and can not be cured by hospitals, kind nurses and learned physicians. We, of the medical profession, are entirely out of place when we undertake the care of criminals who are as healthy and strong as we are. Let the police, judge and lawyers have their share of work. We have finished our work when we have instructed the people how to prevent disease, and have cared for the sick. Let us stay in our proper place. There is a class of people elected to take charge of the criminals, and we should not meddle when we are not called.

W. P. Howle, M.D.

Oran, Scott County, Mo.

## Treatment of Uterine Fibroids.

*To the Editor:*—In a recent editorial of the Journal, Dec. 9, 1893, on the above subject, three methods of cure were presented: "The application of electricity to the growth; the induction of premature menopause by removal of the ovaries and tubes; and the removal of the tumor, either with or without the removal of the uterus and its appendages." While the writer of the editorial took a conservative course in presenting the above methods as old established treatments, it seems to me it would not have made his authority any less comprehensive if he had mentioned the new operations of promise which are now on trial in this country and in Europe, for the difficulty under consideration. Ignorance of the subject can not be gracefully advanced by an editorial writer, who of all writers must be abreast of the literature of his subject. Therefore I must take it for granted, that the writer simply exercised his editorial prerogative and used his discretionary power in deciding that the subject is not yet ripe for editorial recognition.

As a correspondent, however, may I take the liberty of calling your readers' attention to the following facts about the new operations for fibroids of the uterus?

December, 1892, I read a paper before the Chicago Gynecological Society on "A New Operation—Vaginal Ligation of a Portion of the Broad Ligament for Uterine Tumors or Hemorrhage." At that time I read the report of the first two cases operated on. This paper was published in the *American Journal of Obstetrics* for April, 1893. At the Milwaukee meeting of the Association, I read another paper on the same subject, in which I reported five cases upon which I had operated. This report appeared in the Journal of the Association for Sept. 2, 1893. These articles have been quite extensively quoted in several of our best journals.

In the *Archiv f. Gynekologie*, xliii, iii Hft., p. 534, will be found an article by Sigmund Gottschalk, in which he discusses the "Histogenese und Ætiologie der Uterus Myomæ," and in concluding, advises the bilateral ligation of the uterine arteries for incipient myoma.

In the *Centralblatt f. Gynekologie*, No. 33, Aug. 19, 1892, Küstner reports having operated on two cases of fibroids in which he ligated both uterine arteries from the vagina with good results—the tumors having rapidly decreased in size and the hemorrhage in each case ceasing. He refers to Gottschalk's recommendation of the procedure, and criticises him for not describing a technique.

In the *Centralblatt f. Gynekologie*, No. 39, Sept. 30, 1892, Gottschalk replies to Küstner, and gives a more detailed description of technique. This writer has treated seven cases, two of which had been treated so recently that their evidence for good could not go further than to show the immediate beneficial effect on hemorrhage, which was favorable. In the other five cases the tumors have diminished perceptibly in size, and the menstruation has markedly decreased in quantity.

My operation differs from that described by the above writers in that besides ligating the uterine arteries, I also include the whole of the base of the broad ligament in such a manner as to include as much of its nerve supply as possible, in order to get a powerful trophic influence. Besides including in the ligatures the nerves in *all* cases, in *suitable* and in *desperate* cases the ovarian artery of one side is also tied.

The importance of cutting off the nerve supply I do not think can be over-estimated. Every operator of much experience is aware how a small shock will frequently cause fibroids of the uterus to diminish in size or to disappear entirely. A simple exploratory incision, has frequently produced this effect. Add to this the severing of their nerve supply and the trophic disturbance can but be great, especially when this is combined with a procedure which suddenly deprives the uterus of two-thirds of its blood supply. Then, too, by severing the nerve supply, the apparatus by which a blood draught would ordinarily be made known to distant parts and collateral circulation established, is rendered inoperative. For these reasons I insist upon the ligation of all the contents of the broad ligament.

I have performed my operation in eight cases. All bleeding fibroids, varying in size from the proportions of a three months pregnant uterus to one which extended above the umbilicus. In every case, except two, the hemorrhage has ceased promptly after the operation; in these two the cessation was only partial, because the operations were incomplete. In *all* cases the menorrhagia has finally been permanently relieved.

In the six cases in which time enough has elapsed to judge of results, the tumors have decidedly diminished in size. The one which extended above the umbilicus, operated on in January, is now but little larger than a normal uterus. These brilliant results have been accomplished too, without the long train of distressing sequelæ which follow the more severe operations of removal of the appendages or hysterectomy.

For more detailed accounts of this operation, and the history of the cases, the reader must refer to the literature given in this letter.

In the editorials of the future, it seems to me probable that this new operation will occupy about the following relative position in the operative procedures for fibroids: 1, hysterectomy; 2, vaginal ligation of the broad ligament; 3, removal of the appendages.

Yours very truly,

Chicago, Dec. 13, 1893. Franklin H. Martin.

## What Is Amblyopia Exanopsia?

*To the Editor:*—Having devoted considerable attention to the study of cases presenting typical and indisputable illustrations of amblyopia exanopsia, I am disposed to respond to your query (in an editorial) in a recent issue of the Journal. Is there an amblyopia exanopsia? and place myself on record as being decidedly of the opinion that many cases of obtundedvision are properly ascribable to non-use of the eye in question, and can not justly be attributed to other causes. In order to induce us to accept such a condition, it seems that it is only requisite for us to revert to the fact that the process of seeing is virtually an educational one at the outset, and

that while all of the requisite anatomic arrangements may be present in any given case, which are known to be essential for the visual performance, such as transparent optical media, physiologic accommodation, normal refraction, normal retinæ, together with normal optic nerves, and finally, physiologic visual cortices, yet unless the eye is stimulated to the proper extent at the beginning of the individual's career, the condition known as amblyopia exanopsia can and does ensue in a certain percentage of cases. It has been advanced as an explanation of this class of cases, that there is back of all other factors an inferior mental perceptivity, but this must be largely discountenanced by the undeniable fact that, after correction of any and all refractive and muscular errors, the individual's visual acuity rises to a marked extent if the corrective measures are instituted timely enough. Thus, it has been almost my invariable experience to note that in those cases of amblyopia exanopsia, occurring in youth in which the refractive and muscular errors have been overcome, the sight of the amblyopic eye soon rises to a perceptible extent, and ultimately vies with its fellow in visual acuity.

The case referred to in your editorial comments, quoted by Dr. W. B. Johnson, is but one out of many in which the amblyopic eye has assumed a marked visual improvement, when necessity compelled it so to do by the accidental loss of the good eye, and, as stated by you, is strongly suggestive of the probability of the occurrence of amblyopia as a sequence of disuse. Many good authorities are wavering in the balance with respect to this question; but it seems to me that the preponderance of evidence is in favor of the occurrence of amblyopia consequent upon disuse. It is, of course, not difficult to collaborate a series of cases in which enter complicating elements serving to obscure the diagnosis. Time and again, after tenotomizing the contracted internus for convergent strabismus in youthful cases and applying proper optical correction to the hyperopia present, I have noticed an eye that was prior to such measures decidedly amblyopic, assume a degree of useful vision, which progressively advanced in power, and to my mind is strongly conclusive that the amblyopia followed disuse.

Now, it must be fully understood that the retinæ once educated to the full appreciation of images formed by the dioptric system are not comparable to the primitive untrained retinæ, for it is conceded that when the retinæ have acquired their maximum development, images may be excluded for protracted periods without impairing their sensitive, impressionable nerve elements, as is palpably demonstrated by cases in which the removal of hyper-mature cataracts serve to restore fairly acute vision. And again, microscopists, engravers and others, compelled in their work to exclude the object perceived with one eye, do not necessarily impair their vision by so doing. So, too, with cases of opaque corneæ in which an iridectomy restores vision. Squint in cases of opaque corneæ is explicable on the ground that there is in all cases a tendency towards binocular fusion, and if there is an opacity in an isolated part of the cornea, there is a strong desire on the part of the individual to direct his eyes in such a manner that the clear part of the cornea will be brought into use, and thus enable him to bring the most sensitive part of his retina, the fovea centralis, into play, thus taxing the muscular mechanism to an extreme degree, which is ultimately followed by a yielding of the weaker muscle and rotation of the eye towards the preponderating muscle.

One of the strongest arguments against the acceptation of a cortical defect lying at the bottom of amblyopia, is the fully accepted fact of semi-decussation of the optic nerves in the higher vertebrates, for in view of this anatomic provision it would be necessary that both cortices should be seriously impaired, which would cause either complete obscuration of vision of both eyes, or double hemiopia instead of an amblyopia of the one side, as is so frequently found; and it seems to me that a better and more plausible explanation of amblyopia, granting the retina is normally perceptive, would be defective conduction of the optic nerve fibers, and especially of that portion of the nerve styled the papillo-macular bundle, which is formed of separate nerve filaments connecting the macula lutea with the brain. Assuming that these cases of amblyopia reveal no marked pathologic changes ophthalmoscopically, our knowledge of the distribution of the optic nerve fibers enables us to determine with a certain positiveness the site of the lesion in the optic tract, providing the same is due to a break in the conduction. Thus in every case in which the defect is in one eye, or in asymmetrically placed defects of both eyes, the lesion lies in the optic nerve anteriorly to the chiasm, inasmuch as all breaks in the conduction posteriorly to the chiasm result in symmetrical visual defects, and for the same reason complete blindness of one eye, the other being normal, must be referred to a disturbance in front of the chiasm.

This and much more might be stated in support of the theory that amblyopia exanopsia should be classed in the same category with cases of hemiopia, either total or incomplete. Very respectfully,

JAMES A. LYDSTON, Ph.D., M.D.

Chicago Dec. 11, 1893.

## Abdominal Dropsy.—Sixty-seven Tapping Operations on One Patient.

MARION, OHIO, Dec. 15, 1893.

*To the Editor:*—The following interesting case is worthy of report, I think:

Mrs. B., aged 80, from disturbed hepatic circulation has been afflicted with abdominal dropsy for the past eleven years. During the summer and fall of 1882 the abdominal cavity became so distended with the fluid that the lady was unable to walk, nor could she lie down, but was compelled to get what rest she could in an easy rocking chair. Drugs for carrying off fluids were tried with negative results. She finally consented to be tapped, and the operation was performed Dec. 23, 1882, for the first time. Great relief followed, and the patient was able to be up and around, but the fluid re-accumulated and she was again tapped seven weeks from the first operation. From that time until her death Dec. 3, 1893, she was tapped on an average of six times a year, in all sixty-seven times. The average amount of fluid obtained each time was six gallons, by measurement, making in all 402 gallons. The operations were performed with an ordinary trocar and canula.

Taking into consideration the age of the patient, and the number of years added to her life, the case presented is one of encouragement for the operation in abdominal dropsy. Although the fluid re-accumulated, after being tapped the patient was able to do considerable housework, and at times had taken walks of one and two miles. During the eleven years the lady was under my care, no attempt was made at systematic medication for her troubles, because of an irritable stomach that revolted at the use of medicine. It is difficult to tell how long she would have held out, as she was never confined to the bed but for a few days at a time, and death was caused by an attack of la grippe lasting about one week.

Postmortem examination revealed a liver enlarged to about twice its natural size, with shrunken and distorted vessels, and a small ovarian tumor attached by a pedicle to the left ovary.

F. W. THOMAS, M.D.

### Smallpox in Pennsylvania.

PHILADELPHIA, Dec. 11, 1893.

*To the Editor:*—The Board of Health of the city of Reading, Berks County, reports that for the two weeks ending Dec. 4, 1893, 36 new cases of smallpox occurred in that city, with 1 death, making a total of 678 cases to date, with 18 deaths.

Thirty-six cases were discharged from hospital and homes, forty-nine cases were treated at their own homes, fifty-five cases remain under treatment in hospital and homes, and thirteen houses remain marked as infected.

One additional case of smallpox is reported from Mechanicsburg, Cumberland County. One fatal case of smallpox is reported from Jeannette, Westmoreland County. Origin, Homeopathic Hospital, Pittsburg. Eight additional cases of smallpox are reported from Homeopathic Hospital, Pittsburg. The first case at this Hospital was that of James Bennett, recently arrived from Washington County, Virginia. One case of smallpox is reported in Philadelphia. Origin, not known.

The eight cases of supposed smallpox at Altoona, Blair County, were afterwards found to be chickenpox.

Eight cases of beri-beri are isolated in the Quarantine Station Hospital, Chester County, and six convalescents from this disease have been discharged. No deaths. All these cases are Lascars. Very truly yours,

BENJAMIN LEE, M.D., Secretary.

## MISCELLANY.

**The Minnesota Valley Medical Society** held its thirteenth annual meeting December 7 at Mankato.

**Back Numbers Wanted.**—Will pay a fair price for copies of the JOURNAL of January 1 and 16, 1892. Address this office.

**Goes to Russia.**—Dr. Wassail of Chicago, has been appointed court dentist at St. Petersburg, and will go in February to his new post. With him will go his young wife, who writes cleverly and is a musician.

**New Contagious Disease Hospitals.**—The papers of Oshkosh, Wis., and Indianapolis, Ind., inspired by their Boards of Health urge upon their respective cities the establishment of contagious disease hospitals.

**New Hospital.**—The Baptists of Boston, under the leadership of Rev. Everett D. Burr, and Dr. Francis F. Whittier have determined to establish a hospital under the auspices of that denomination.

**Changed its Name.**—The *Pacific Medical Record* has been rechristened the *Medical Sentinel*, by which name it will hereafter be known. It will be as bright and aggressive as ever under its new name, and we trust that the *Sentinel* may always be found guarding the interests of legitimate medicine in the Northwest.

**While hunting** on the battle-field of Chancellorsville, Virginia, Dr. Silvus of Jersey City, recently captured a small snake with two perfectly formed heads, of equal size. When stopping in Washington on his way home he took the snake to the Smithsonian Institute where it created much interest.

**Monument to the Physician-Explorer.**—Dr. Schnitzer, better known as Emin Pasha, the Governor of Eastern Soudan, having been admitted by his surviving relatives to be dead and buried in Central Africa, is to be honored by a memorial in Neissen, Germany, his natal town. In this town there now resides his only surviving sister and his little daughter, Frida. All Germany will be invited to unite in contributing to this memorial.

**A Judicial Dogberry.**—Dr. Gibbs of Omaha, was recently fined by a Judge for being absent from the court room when subpœnaed as a witness. The Doctor pleaded in extenuation that he had been called to attend a patient who was very ill, and could not reach the court room at the time. The Judge asserted that the Doctor should have notified the Court, as the case was on trial, and refusing to accept his excuse fined him $10. Dr. Gibbs said that in the same circumstances he would do the same, whereupon the Judge made the fine $25 and refused to remit it.

**Sir William Jenner,** the distinguished English physician, used to tell with great gusto a tale of a footman of Sir Andrew Clark, that other great English physician who has recently died. Sir Andrew was well known for his kindness to his servants, who regarded their master as the greatest man in the world. One day a gentleman in urgent need of Sir Andrew's services learned from Jeames that it was impossible to see the eminent physician except by appointment. "But, it is most urgent," cried the caller, in dismay. "Quite impossible, sir." "Well, can you tell me, then, of some one else near at hand?" "Well, sir," replied Jeames, reflectively, "there is a very respectable practitioner named Jenner on the other side of the street. I think I may recommend him."

**Slates and Pencils a Means of the Spread of School Diseases.**—Dr. Cyrus Edson, of the New York City Board of Health, is reported as pointing out the new fact that many cases of communicable disease are the result of a practice among school children of exchanging their slates and pencils, while at their studies. The Board of Education will be requested to interdict the passing of slates and pencils from hand to hand. The Inspectors of the Board have reported cases where, in their opinion, measles and scarlatina have been spread among the pupils of the public school by a too free interchange of articles from the sick to the well.

**Spider-web Styptic and Tetanus.**—It is a popular notion in France and elsewhere, that spider-webs are "good for hemorrhage from cuts in the scalp and other wounds." A French paper states that a young man was wounded on the head with a cudgel, whereby a copious loss of blood was caused. The webs were used to check the blood-loss; symptoms of tetanus soon after appeared and a fatal issue followed. An examination of the cobwebs revealed the presence of the bacillus of tetanus, and the theory was formed that an inoculation into the open wound had taken place of this germ. This experience, if verified, tends to put another of the alleged "Nature's remedies" on the shelf. A good clean antiseptic (made so artificially) dressing will have the preference every time in the treatment of scalp-wounds and the like.

**New Dispensary Law Proposed.**—In South Carolina the administration substitute dispensary bill introduced in the Senate is a drastic iron-bound measure. Under it no drink containing a trace of alcohol is allowed to be sold, given away, held in possession, taken from a depot, etc., unless it has the stamp of the dispensary on it. Violation of this is made punishable by thirty days' imprisonment or $100 fine, together with confiscation of the liquor.

Railroads are prohibited from handling liquors and the latter are seizable by constables without warrant. There may be dispensaries in every county, but a majority of ten freeholders in any township can prevent the establishment of a dispensary. In places where liquor-selling is prohibited previous to July 1, 1893, one-fourth of the voters can call an election, which a majority vote shall decide.

Dry counties must pay for constables to enforce the law.

In such counties citizens may have liquor from dispensaries shipped to them. Any person can make wine for his own use and can sell the same through dispensaries by paying a commission of 10 per cent. The payment of a United States tax or any placard indicating that liquors are sold is evidence that the law is being violated. Hotels, where tourists stop, are exempted from the "nuisance" provision and may be agents or dispensers on giving $3,000 bond. All penalties are under trial justices' jurisdiction and warrants are issuable upon the oath of any person who swears upon information and belief.

Distilleries must report quarterly to the State dispenser as to their product and its disposition. Constables may search depots, etc., without warrants. Any person who resists any constable or officer who attempts to seize liquor sold is made guilty of a misdemeanor. Dispensaries are allowed to sell beer by the glass, but no loafing on the premises is allowed.

**An Uncontrolled Controller.**—The City Controller of Indianapolis has been raising so many objections to the bills of the City Hospital, that the authorities of that institution are growing weary.

The Controller refuses to allow bills for medical books of reference, or for necessary repairs of the building.

The Controller's office was recently stirred to its inmost depths on account of a bill for young shade trees, purchased by the Superintendent, to ornament the barren grounds, with a view of making them attractive, and of use to convalescents.

The Controller's cheese-paring ability rose to its highest pitch, when he returned the bill to the Hospital with the following statement:

"I find that the bill for trees is not an obligation incurred in an emergency, but a cold blooded reach for the city treasury."

If the doctors of Indianapolis have the "nerve" with which they are generally credited, they will make a "cold blooded reach" for the City Controller's official scalp at the very first opportunity.

**A Report on Tuberculosis.**—Recommendations to the Health Board made by Dr. Biggs, the Chief Inspector of Pathology Bacteriology and Disinfection in the Health Department, who sent to the Health Board a long statement regarding the contagiousness of tuberculosis, accompanied by a number of recommendations. His explanations regarding the nature of the disease were thus summarized:

"First, tuberculosis is a contagious disease and is distinctly preventable.

"Second, it is acquired by the direct transmission of the tubercle bacilli from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air.

"Third, it can be largely prevented by simple and easily applied measures of cleanliness and disinfection."

Dr. Biggs, in the report, refers to tuberculosis as "the most common and fatal disease which prevails in New York," and makes the following statements: "In 1892 more than six thousand deaths were reported to the New York City Health Department as due to tuberculosis. While this condition of affairs and its great significance have long been recognized by the Board of Health, owing to various considerations well known to those familiar with tuberculosis, this disease has not up to this time come under the official sanitary surveillance of the department."

His recommendations are appended in part:

"First, that there be systematically disseminated among the people by means of circulars, publications, etc., the knowledge that every tubercular person may be a source of actual danger to his associates and his own chances of recovery diminished if the discharges from the lungs are not immediately destroyed or rendered harmless.

"Second, that all public institutions, such as asylums, homes, hospitals, dispensaries, etc., be required to transmit to the Board of Health the names and addresses of all persons suffering from pulmonary tuberculosis.

"Third, that special inspectors be assigned to duty for the investigation of this disease.

"Fourth, that the Board urge upon hospital authorities the importance of separation, so far as possible, in the hospitals of this city, of persons suffering from pulmonary tuberculosis from those affected with other diseases.

"Fifth, that the Department of Charities and Correction of this city be requested to set apart one of the hospitals under its charge, to be known as 'The Consumptive Hospital,' to be used for the exclusive treatment of this disease.

"Sixth, that the Board undertake the bacteriologic examination of the sputum for diagnosis in every case of pulmonary disease of doubtful character in hospitals or private dwellings or tenement houses where the physician in attendance desires that this should be done.

"Seventh, that all physicians practicing their profession in this city be requested to notify this Board of all cases of pulmonary tuberculosis coming under their professional care."—*New York Tribune.*

## THE PUBLIC SERVICES.

**Army Changes.** Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from December 9, 1893, to December 15, 1893.

Major JOHN BROOKE, Surgeon U. S. A., is granted leave of absence until Feb. 22, 1894.

First Lieut. BENJAMIN L. TEN EYCK, Asst. Surgeon, is assigned to station at Ft. McIntosh, Texas, for field duty in the Department of Texas.

First Lieut. ALLEN M. SMITH, Asst. Surgeon, granted leave of absence for four months, to take effect on or about Jan. 4, 1894.

Major PETER J. A. CLEARY, Surgeon, leave of absence granted on surgeon's certificate of disability is extended four months on surgeon's certificate of disability, on condition that he report in person to the commanding officer, Army and Navy General Hospital, Hot Springs, Ark., on or before Dec. 11, 1893, for treatment therein.

Major ALFRED C. GIRARD, Surgeon U. S. A., is granted leave of absence for four months, to take effect about Jan. 6, 1894, with permission to go beyond sea.

**Navy Changes.** Changes in the Medical Corps of the U. S. Navy for the week ending December 16, 1893.

Surgeon C. A. SIEGFRIED, detached from U. S. T. S. "Richmond," and granted four months' leave.

Surgeon J. A. HAWKE, detached from Widow's Island Hospital and special duty, Portsmouth, N. H., and to the U. S. T. S. "Richmond."

Surgeon M. H. SIMONS, ordered to Widow's Island Hospital and to special duty at Portsmouth, N. H.

Medical Director R. C. DEAN, ordered as President Board of Medical Examiners, Washington, D. C.

Medical Director A. A. HOEHLING, detached from Board of Medical Examiners, and wait orders.

Medical Director MITCHELL BRADLEY, relieved as President of Board of Medical Examiners, and ordered as member of the Board.

**Dr. John S. Fryer** of Kansas City, son of Dr. B. E. Fryer, U. S. A. has been appointed Third Assistant Surgeon at the Soldiers Home. The appointments are made by the National Board of Managers, who act on the recommendation of the surgeon in charge and the Governor of the Home.

### LETTERS RECEIVED.

(A) Ashmead, A. S., New York, N. Y.; Allen, Ulamer, Jersey City Heights, N. J.; Aglar, J. F., St. Louis, Mo.

(B) Bryne, J. H., Chicago, Ill.; Beck, Carl, New York, N. Y.; Batten, J. M., Pittsburg, Pa.; Blodgett, E. J., New York, N. Y.; Brainerd, L. N., Alma, Mich.; Bryant, W. Cullen, Pittsburg, Pa.; Brown, E. M., New York, N. Y.; Brucker, C. M., Tell City, Ind.; Baxter, W. E., Bangor, Me.; Burnett, C. H., Philadelphia, Pa.

(D) Devilbiss, A., Toledo, Ohio.

(E) Earle, Frank B., Chicago, Ill.

(G) Gardner, F. A., Washington, D. C.

(H) Hill, R. J., Minneapolis, Minn.; Hoch, W. R., Philadelphia, Pa.; Harsha, W. M., Chicago, Ill.

(J) Jensen, P. C., Manistee, Mich.; Johnson, L. O., Bellevue, Mich.; Judson, A. B., New York, N. Y.

(K) Kelper, Geo. F., Lafayette, Ind.; King, A. F. A., Washington, D. C.

(L) Lawless, Jas., Chicago, Ill.; Lyon, H. J., Chicago, Ill.; Lautenbach, L. J., Philadelphia, Pa.

(M) McIntire, Charles, Easton, Pa.; Magruder, G. L., Washington, D. C.; Marsin, J. M., Massey, Texas.

(P) Pottberg, Charles, Philadelphia, Pa.

(R) Renfro, J. C. B., Houston, Texas.

(S) Seymour, F. E., Ft. Dodge, Iowa; Shields, W. B., St. Francis, Ark.; Stafford, H. E., New York, N. Y.

(T) Tyrell, G. G., Jr., Sacramento, Cal.

(W) Westmann, B. & Co., New York, N. Y.; Whisler, H. C., New Brighton, Pa.; Whitehouse, H. H., New York, N. Y.